The Philosophical Society of Texas

PROCEEDINGS

2008

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OF THE ANNUAL MEETING

AT SAN ANTONIO

DECEMBER 5–7, 2008

LXXII

AUSTIN
THE PHILOSOPHICAL SOCIETY OF TEXAS
2008

The Philosophical Society of Texas for the Collection and Diffusion of Knowledge *was founded December 5, 1837, in the Capitol of the Republic of Texas at Houston by* Sam Houston, Mirabeau B. Lamar, Ashbel Smith, Thomas J. Rusk, William H. Wharton, Joseph Rowe, Angus McNeill, Augustus C. Allen, George W. Bonnell, Joseph Baker, Patrick C. Jack, W. Fairfax Gray, John A. Wharton, David S. Kaufman, James Collinsworth, Anson Jones, Littleton Fowler, A. C. Horton, I. W. Burton, Edward T. Branch, Henry Smith, Hugh McLeod, Thomas Jefferson Chambers, R. A. Irion, David G. Burnet, and John Birdsall.

The Society was incorporated as a non-profit, educational institution on January 18, 1936, by George Waverly Briggs, James Quayle Dealey, Herbert Pickens Gambrell, Samuel Wood Geiser, Lucius Mirabeau Lamar III, Umphrey Lee, Charles Shirley Potts, William Alexander Rhea, Ira Kendrick Stephens, and William Embrey Wrather. On December 5, 1936, formal reorganization was completed.

The office of the Society is housed with the Texas State Historical Association, P.O. Box 160144, Austin, TX 78716.

Edited by Terri Killen and Ashley Brown.

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Texas and Architecture

The Philosophical Society of Texas

"Texas and Architecture" was the theme of the 171st anniversary meeting of the Philosophical Society. President Boone Powell and the Program Committee compiled an impressive list of speakers to discuss architecture and sustainability, issues that are ever pertinent in the face of energy, global warming, and sustainability challenges. The meeting was held at the Marriott Plaza Hotel in San Antonio, Texas. Almost 300 Society members and guests were in attendance.

The University of Texas at San Antonio School of Architecture sponsored the first events of the program with optional morning and afternoon tours on Friday December 5, 2008. Participants experienced Historic San Antonio: The Roots of its Architecture before continuing on to the afternoon tour of Contemporary San Antonio: The Emerging Metropolis. The evening concluded with a reception at the King William Historic District residence of Society member Charles Butt followed by tours and dinner at the San Antonio Museum of Art.

Saturday December 6, 2008, began at the Marriott Plaza Hotel with a welcome and introduction by President Boone Powell. Mr. Powell introduced the new members and presented them with their certificates of membership. The new members are: John Mendelson, Houston; Maconda Brown O'Connor, Houston; Elizabeth Rogers, Alpine; Kenneth Shine, Austin; Lawrence W. Speck, Austin; Lois Farfel Stark, Houston; and Marshall T. Steves, Jr., San Antonio.

After the morning session titled "Architecture and the Environment: Challenge and Change" and a break for lunch, participants returned to the meeting where Lonn Taylor presented two Awards of Merit. The 2007 Award of Merit went to Richard B. McCaslin for *At the Heart of Texas, 100 Years of the Texas State Historical Association, 1897–1997*. The 2008 Award of Merit went to Stephen Fox for *The Country Houses of John F. Staub*. The program continued with the afternoon session "Meeting the Challenge." The finale of the day's events included a reception at the home of Patsy Steves and her late husband, Marshall Steves, Sr., who was a member of the Society. The evening concluded with dinner at the McNay Art Museum and a piano concert by Society member James Dick.

The annual business meeting was held on Sunday morning, December 7, 2008. Ron Tyler, Secretary for the Society announced that the current membership stood at 199 active members, 67 associate members and 74 emeritus members for a total of 330. The names of the recently deceased Society members were read: Anne Armstrong, Charles Bonjean, Michael

DeBakey, Ralph Feign, Philip Hoffman, Ruth L. Kempner, Roy Mersky, Charles P. Storey, John Wheeler, and Joseph Irion Worsham. Officers elected for the year 2009 were: Michael L. Gillette, President, J. Mark McLaughlin, First Vice-President, Ron Tyler, Second Vice-President, Ann Hamilton, Secretary, J. Chrys Dougherty III, Treasurer.

After a summary and discussion of the weekend's program, President Powell adjourned the meeting until December 4–6, 2009 in Austin.

Member and Book Award Committee Chair Lonn Taylor presenting the 2008 Award of Merit to Stephen Fox for The Country Houses of John F. Staub, *Texas A&M University Press, 2007. Photo by member John Gullett.*

Member and Book Award Committee Chair Lonn Taylor presenting the 2007 Award of Merit to Richard B. McCaslin for At the Heart of Texas, 100 Years of the Texas State Historical Association, 1897–1997, *Texas State Historical Association Press, 2006. Photo by member John Gullett.*

Opening Remarks and Introduction of New Members

Boone Powell

Mr. Powell: Welcome to the opening session of Architecture and Texas, the 171st anniversary of the founding of the Philosophical Society of Texas. It's wonderful to be part of a group like this. There are so many special people here that have so much divergent intelligence that they share with us. It's just great to be a part of it. This is my seventeenth year.

I never cease to be amazed at the people who are part of the Philosophical Society and the exceptional new members who join us. That's how we're going to start today, by introducing our new members. The program committee decided to pay a little more attention to our new members this year because they're the lifeblood of what we are and what we're all about. I will say something about each of the new members and ask them to come forward.

The first new member I'm going to introduce is John Mendelson. John is the only one of our new group that couldn't be here today. Dr. Mendelson has served as the third president of the University of Texas M.D. Anderson Cancer Center in Houston since 1996. He has guided an unprecedented growth in the quality and scope of programs at the nation's largest comprehensive cancer center, where he is also a professor of cancer medicine. Under his direction the center has been named the top cancer hospital in the nation in five of the past eight years in the *U.S. News and World Report's* America's Best Hospitals survey.

Born in Cincinnati, Ohio, he received his B.A. in biochemical sciences from Harvard in 1958 and attended the University of Glasgow in Scotland as a Fulbright Scholar where he researched molecular biology. He received his medical degree cum laude from Harvard Medical School. He was the first undergraduate student of James D. Wilson, Ph.D., who won the Nobel Prize in medicine for identifying the structure of DNA.

John led cancer programs at the University of California San Diego and Memorial Sloane Kettering Cancer Center. He pioneered laboratory and clinical research that led to development of a targeted drug that inspired an entirely new class of anti-cancer agents. John and his wife, Anne, were honored in 2001 by Leadership Houston with the Distinguished Leadership Award.

New member Maconda Brown O'Connor escorted by Roger Beaumont. Photo by member John Gullett.

An avid scholar of history, philosophy and religion, he is an active board member of Greater Houston Partnership, the Houston Technology Center, Bio-Houston and Houston Board. Nominated by Isabel Brown Wilson and Richard Wainerdi and seconded by Bruce LaBoon and David W. Leebron.

Our next member is Maconda Brown O'Connor of Houston. Few people in Texas or the nation have benefited poor and troubled children more than Maconda Brown O'Connor. Throughout her life that goal has been the focus of her scholarship, public activism and philanthropy. A graduate of St. Thomas University with a Master's and a Ph.D. in social work from Smith College, Dr. O'Connor is widely known for her pioneering research on children's effective levels and her unflagging support for organizations that aid at-risk kids.

She has been honored by a number of institutions for her social work, including Humanitarian of the Year in 1999 by the Group Psychotherapy Foundation. In 2003 the Greater Houston Collaborative for Children established the annual Maconda Brown O'Connor Spirit of Collaboration Award to recognize organizations committed to developing and sustaining programs that benefit children in Houston.

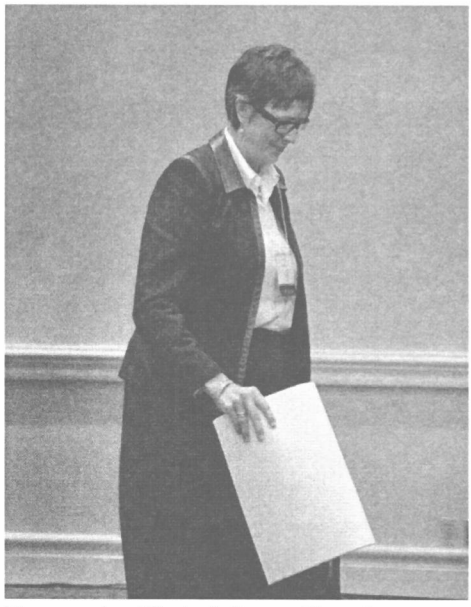
Beyond her humanitarian commitments Dr. O'Connor has displayed broad interest in and support of the arts and has generously supported art institutions in Texas and throughout the nation. Her efforts at extending and refining the distinguished legacy of her renowned family make Maconda Brown O'Connor a unique and salient member of the Philosophical Society. Nominated by Penny Beaumont and seconded by Isabel Brown Wilson.

Next is Elizabeth Rogers of Alpine who is an accomplished lawyer and recognized as an expert in her field. She was born in Uvalde, Texas, grew up on a sheep and goat ranch in Uvalde County. After graduating from Texas A&M she received a JD from South Texas College of Law in Houston. She has served as Assistant Federal Public Defender for the El Paso and Pecos divisions of the western districts of Texas since 1984.

Before that, she practiced law in El Paso with the firm of Peticolas, Luscombe & Stephens. In 2000 the National Association of Federal Defenders named her Outstanding Federal Defender. An expert in treaty provision

transfers, she has made numerous trips to South America to represent American citizens incarcerated there. In 2004 she spent a month in Mongolia as an advisory to a newly created legal program.

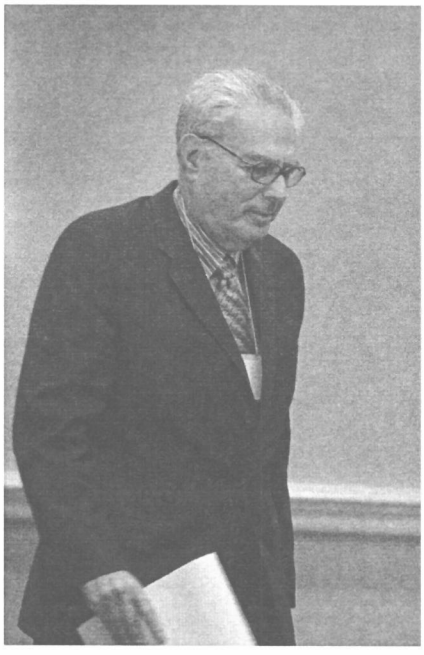
Rogers served on the Board of Directors of the State Bar of Texas from 2005 to 2008. She's a former president of the El Paso Young Lawyers Association and a former director of the El Paso Bar Association and a former member of the El Paso City Planning Commission. In Alpine she is a member of a reading group composed largely of ranch women. Nominated by Lonn Taylor, seconded by Royal Ferguson, Edward Prado and Richard Bartlett.



New member Elizabeth Rogers. Photo by member John Gullett.

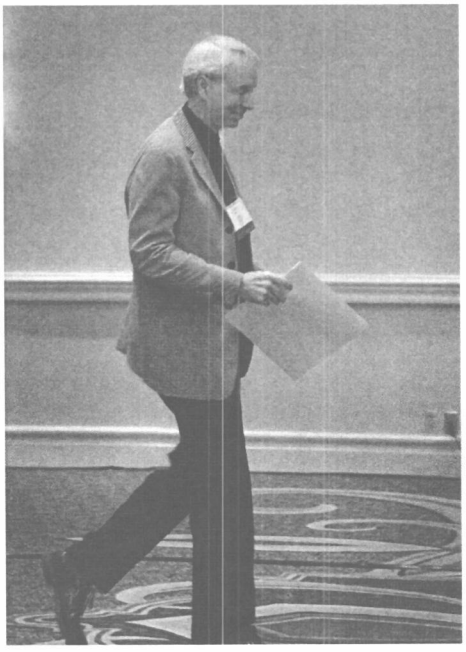
Our next new member is Kenneth Shine, M.D., Chancellor ad interim and Executive Vice-Chancellor for Health Affairs at the University of Texas System Administration, world-renowned cardiologist and psychologist.

Dr. Shine was born in Worcester, Massachusetts, graduated summa cum laude with a biochemical sciences degree from Harvard College and cum laude in 1961 from Harvard Medical School. His career began at UCLA School of Medicine, where he was assistant professor of Medicine and director of the Coronary Care Unit. He was professor of Medicine and Executive Chairman of the Department of Medicine in 1981 and Dean and Provost for Health Sciences in 1986. He served as president of the American Heart Association and is a fellow of the American Academy of Arts and Sciences and the American College of Cardiology. In 1988 he was elected to the Institute of Medicine.



New member Kenneth Shine. Photo by member John Gullett.

Dr. Shine's focus on the health of Texans and meeting their health care needs has been



New member Lawrence Speck. Photo by member John Gullett.

apparent—has been paramount in his role at the University of Texas system. He organized symposia to underscore the importance of cultural sensitivity and health care and led the Task Force for Access to Health Care in Texas, a group that focused their attention on the growing health needs and access to affordable health insurance coverage.

A founding director of the Rand Center for Domestic and Internal Health Security, he has led the center's efforts to make health a central component of U.S. foreign policy and guide the center's evolving research agenda. Nominated by Mark G. Yudof and seconded by Peter Flawn.

Our next new member is an architect. Lawrence W. Speck is a fifth generation Texan who was born in Friendswood. He has gained considerable national and international recognition for his work as an architect and architectural critic, an academic and a teacher.

An American Institute of Architects Fellow, he is a W.L. Moody Centennial professor in the School of Architecture at the University of Texas at Austin. Speck served as dean of the school from 1992 to 2001 and he has been on the faculty since 1975. He was selected to be a member of the Academy of Distinguished Teachers, the highest honor given at the University of Texas at Austin in 2004.

Speck is an outstanding teacher, an influential scholar and a design leader. He has published numerous scholarly and professional articles and book chapters in the U.S. and abroad, most recently authoring *Technology, Sustainability and Cultural Identity*. A registered architect in the State of Texas, Speck is a principal in the architectural firm of PageSoutherlandPage. Over the past 25 years his design work has won 33 national design awards, 21 state or regional awards and 83 local design awards. Lawrence Speck received his Master's of Architecture and second Bachelor's Degree from MIT. Nominated by Frederick R. Steiner and seconded by Boone Powell.

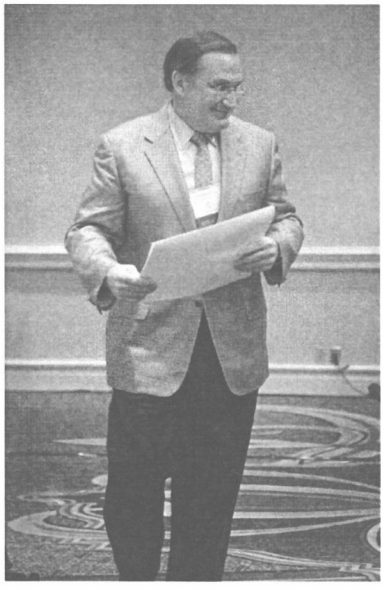
Our next new member is Lois Farfel Stark of Houston. Lois was a producer and writer of documentaries for NBC Network News. She filmed in Abu Dhabi, Israel, the Trucial Oman, Cuba, Liberia, South Africa, Northern Ireland, England, France and throughout the United States, focusing on a variety of issues ranging from the tenth anniversary of the Cuban

Revolution to the conflict in Northern Ireland and to religious cults in the U.S.

Upon returning to Houston she continued to produced for NBC network, KPRC TV and independent organizations with films on medicine, architecture, mental health and the internationalization of Houston. Her films have earned an Emmy, two CNA Golden Eagles and a Silver Gavel from the American Bar Association among many others. In civic affairs she has been a Trustee of the Alley Theater, Texas Children's Hospital, St. John's School, Sarah Lawrence College, Texas Humanities, Texas Commission on the Arts, the Harry Ransom Center and a Fellow of American Leadership Forum and Center for Houston's Future.

New member Lois Stark. Photo by member John Gullett.

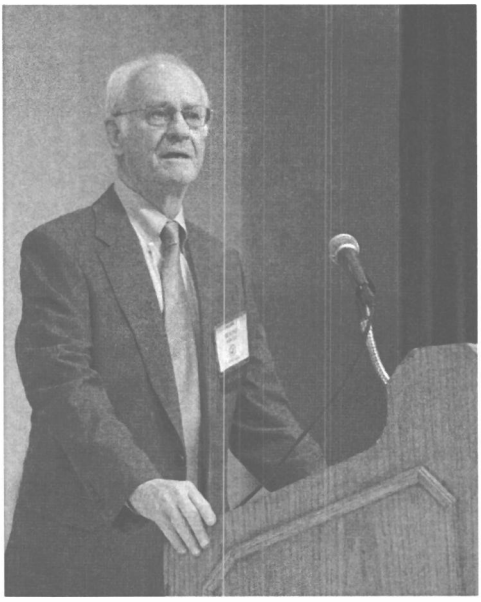
Currently she lectures and is writing a book, The *Web and the Ladder*, tracing the shape of the world views for migratory man through the space age. Lois is a native Houstonian and is married to George Stark. She is a graduate of St. John's School, Sarah Lawrence College and holds two master's degrees in communication and education. She was nominated by Ramona Adams Davis and seconded by Harris L. Kempner.



New member Marshall Steves. Photo by member John Gullett.

Marshall T. Steves, Jr. of San Antonio is our final introduction. Marshall distinguished himself here at Texas Military Institute and completed his undergraduate degree from Harvard College and received his degree in law from the University of Texas Law School.

Marshall clerked for Federal Judge John H. Wood. He then joined the law firm of Matthews and Branscomb where he served as managing partner before leaving to become president and chief executive officer of Crest Doors, Incorporated. He has served for years on the McDonald Observatory Board of Visitors and has enjoyed the avocation of amateur astronomer.



2008 President, Boone Powell. Photo by member John Gullett.

He and his wife Jane collect regional modern art. Marshall is by word and deed the essence of the philosophical. Whether he is the product of the late '60s at heart or influenced by Judge Wood, whom he greatly admired, or simply a product of genes and environment, his personality and interests are a perfect fit for the Philosophical Society. Nominated by Boone Powell and seconded by Baker Duncan, Luci Johnson and John Cornyn.

New members are the lifeblood of this organization. We've been doing a good bit of talking about how we can reinforce our efforts and how we can continue to get the kind of members we got this time. It's a great class this year; I think you'd all agree.

I'll kick off the program, Architecture and Texas, with just a few comments. This meeting's focus on architecture and sustainability is especially pertinent today. It gets more pertinent every year. Issues of energy, global warming, and sustainability all abound in the world today. We read about it in the papers every day. As our program will elaborate, these issues are all intricately related to architecture in Texas.

We've arranged a wonderful, highly distinguished group of speakers for the meeting. The program committee provided superb ideas and assistance. I was joined by Frederick Steiner, Betty Sue Flowers and Ted Flato. We've been working on this for two-and-a-half years; I can hardly thank them enough.

Over those years we developed an ambitious program. It was clear that we were going to require significant financial assistance beyond the ordinary. Many members of our San Antonio group have contributed to this meeting. It's not just a few of us. The generosity of the Steves family, Frost Bank and Charles Butt has been extremely helpful. In addition, Charles Butt hosted us at his superb residence last night and Patsy Steves will do the same at her beautiful home tonight. We are so fortunate to have our San Antonio group's support. Thanks to all of you out there from San Antonio who so generously contributed to the support of the program.

I would also like to thank UTSA School of Architecture. Some of you were fortunate enough to go on the tours yesterday which UTSA put together. In that connection, President Romo was instrumental in making that possible. We are very grateful.

You may ask why architecture is so critical to energy use and sustain-

ability. Various studies that I've seen estimate that 35 to 50 percent of all the energy we use in the United States is consumed in constructing and operating buildings. Now, compare that to the approximately 25 percent we use in transportation to understand why building energy is such a major component of potential energy savings.

Moreover, lest you think the world has been mostly built out, in fact, an estimated two-thirds of the total building development expected for the world of 2050 has yet to be built. The opportunity for creating more efficient buildings and thereby achieving major energy savings is clear. Architects throughout Texas and the U.S. are increasingly involved in addressing this, not just as a problem but as an opportunity for design innovation. There will be more on this specific topic this afternoon.

This is a world challenge, as well as a U.S. and a local challenge. It has been noted quite accurately that we must think globally, but must act locally. We will need to change the way we build our cities and towns. They must be more compact, walkable. They must have mixed use. They need to be connected by public transit to centers and community facilities.

As we grow—and we are growing rapidly—we need to exhibit far more care and stewardship of the land in Texas. In many ways, designers hold the key to creating a far better world than that otherwise in prospect. Now, I would like to introduce Frederick Steiner. Dr. Steiner is Dean at the School of Architecture at U.T. Austin. He's going to moderate our morning session and will introduce our speakers.

Architecture and the Environment:

Challenge and Change I

Frederick R. Steiner

Dean Steiner: Good morning. Wow, what a wonderful turnout, wonderful day. Thank you all for being here. I'd like to amplify just a couple of the comments that Boone made and then bring our panel up. They're going to come up one at a time to give their presentations because they'd like to see the other presentations, as well.

The topic of the first session this morning is Architecture and Environment. Those are two words that one doesn't always associate with each other. When we think of architecture the first thing, at least I think of, is buildings. Buildings are obviously extremely important to architecture.

As Boone just pointed out, around 50 percent of our energy use in the United States comes from buildings. If we're concerned about carbon and CO_2 gases, 50 percent is CO_2 gas production comes from buildings. We think of buildings individually, but we need to think of buildings in terms of a network: how they relate to a culture, how they relate to other buildings in the built environment.

About 25 percent of our energy use in the United States and also about 25 percent of our greenhouse gas production comes from transportation. You put buildings together with transportation, that means at least 75 percent of both our energy challenge and our greenhouse gas challenge comes from the built environment.

This comes at a time when we're living in the first urban century. It's a very, very profound change in human history. Sometime in the last two or three years, over half of the world's population became urban. The percentage of urban dwellers is expected to continue to increase into the 21st century. By 2030 or 2040 about two-thirds of the planet will live in urban regions.

This comes at a time when the population is growing rapidly, too. At the beginning of the 20th century there were about 2 billion people on the planet Earth. There are now about 6.7, 6.8 billion people. That's supposed to go up to 9 billion people by mid-century or the end of the century.

Unlike other developed countries, the United States is growing. We've passed 300 million people and are expected to hit 400 million by 2040. Right in the middle of that growth is Texas, which is one of the fastest growing states in the nation. Sometimes I think our Legislature doesn't

quite realize this, but we've become an urban state. We sometimes have a rural and cowboy ethos, but we very much are an urban state.

Here in San Antonio we're part of the base of what's been called the "Texas Triangle", with San Antonio and Houston at its base and Fort Worth and Dallas at its peak. This is one of the ten fastest growing mega-regions in the United States.

To come back to that energy use and carbon use the built environment is responsible for, because of population growth, during this century we're going to have to double, maybe even triple the amount of buildings we have here in Texas. That simply means that we can't keep building buildings the way we have in the past; it's clearly unsustainable.

So with that, it's my pleasure to welcome three wonderful speakers. Their bios are in your packet, so I won't repeat them. We're really privileged to have Marilyn Taylor as our keynote speaker this morning. She is the new dean. Hal Box, our predecessor is called the old dean; Larry is the dean, after seven years I'm still called the new dean, which is a nice thing, but Marilyn is really a new dean, only a couple months on the job. She has had a very distinguished leadership career with the architecture firm SOM, one of the largest and most important architecture practices in the world and also as a leader of the Urban Land Institute. She's going to give a keynote address on Architecture and the City and the Post Carbon World.

She'll be followed by Steve Murdock, who is the head of the U.S. Census Bureau and we're really fortunate that he's come back to Texas for this session to help us understand the demographics. Our third panelist this morning is Steven Moore, my colleague at the University of Texas at Austin who approaches architecture more from the perspective of architecture as technology rather than architecture as art.

So with that, please welcome Marilyn Taylor.

Architecture and the City and the Post Carbon World

Marilyn Taylor

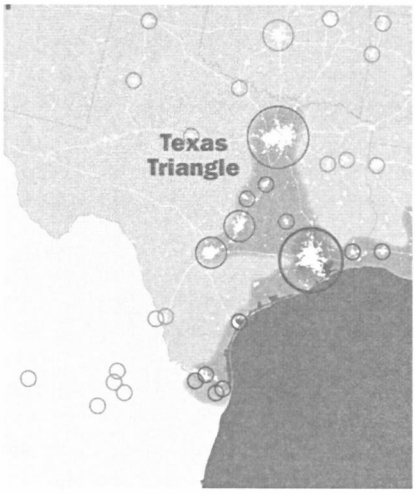
Dr. Taylor: President Powell, members of the society, friends and colleagues, how wonderful that you have brought your intelligence and your curiosity to a topic of such extraordinary interest to all of us in our fields and, in fact, a topic that I believe we need to work together to make of broader interest to all the members of American society, in fact, to our role as global citizens, as well.

We've taken too much for granted. Life has been too easy. Clearly the changes in the economy right now are changing that perspective. But nonetheless, it's time for us to step up and take a much bigger responsibility for what's happening to our world.

When Dean Steiner gave me my topic I said, Oh, my goodness. That is larger than Texas to talk about, architecture, the city and the world post carbon, which I have reinterpreted and written down here as the world after peak oil. What I'm going to do is use this time to touch a little bit on architecture, my impressions of what Texas architecture is about, having come here over the last three decades or so. I'm still a bit of a foreigner to your country, which is characterized, I think, by a wonderful sense of hospitality and welcome, by a sense of buoyancy, which one could call boastfulness or pride and also by oil. That is well-being and a generosity with which to share it.

When we come to cities, it's a slightly different mixed story. Texas cities are new. They without question have a vibrancy and tend to be auto dominated but increasingly are finding aspects of the public realm that make them very welcome and give them an identity, San Antonio having led the way on that long ago. They do still share a tendency to sprawl, which is something that we really need to address.

Fritz mentioned this, the Texas Triangle. When I think about post peak oil and when I think how the world needs to change and evolve in response to the extraordinary environmental and demographic pressures we're facing, I think of the Texas Triangle. Access, that is, mobility, both in the sense of being able to move easily from place to place but also in the sense of being able to move upward within society and take advantage of the opportunity to advance yourself and your family. Clearly, it's about efficiency. Efficiency of capital as well as efficiency of all of the tangible assets.



It's about aiming at a competitive vitality that is of lasting value for all of our residents and it is, as we will discuss and many people, I think, will touch on today, really thinking on a regional basis. I'm going to touch on all these things. I'm going to take us on a short trip around the world to put it in a larger context, come back to the United States and then offer a few closing comments.

Texas architecture is often big; it boasts of success, it bears the style of its time of design since things are so new. Like downtown Dallas where our firm was privileged to participate in design of the towers. We're moving forward, though. If you move from downtown to midtown, post-modern gives way to the future. Thirty years later we see the incredible forms of things that we can now build. That doesn't necessary mean we should build them. But things that have a mixed use, family-oriented quality even as they're expressed in very slick architecture.

When I was in school and through my early years of practice, we were always extremely impressed by the way Texas chose to express its civic architecture. Here, as in Dallas City Hall or in one of my firm's favorites, probably a more boastful building, but nonetheless a proud statement of Texas' contributions at the LBJ Library.

I think Texas architecture will find new heights in Foster's Winspear Opera House, where the entry features the dramatic ribbed glass panels of the McDermott Performance Hall—this is just one example of a very urban, very pedestrian-friendly arts district that's being planned. None however, are likely to rise to the heights of that of the master, Lou Kahn, whose Kimball Museum is such a brilliant statement not about architecture itself but about volume, space and the use of light and the control of that light. This is clearly one of those pictures that lives in our imaginations as we think about the role that architecture plays for society.

Texas cities are kind of another matter, a little perplexing to somebody who grew up in a little town in Iowa and now lives in New York City and Philadelphia. Most have established their character really from the mid-20th century onward. The large centers cities are multi-centered, like Dallas and Houston. Dallas downtown, where both Victory Park and the Arts District are clearly revitalizing. In Houston, which is famous for not having zoning, took multi-centeredness to a new dimension back in the 1980s and where that really remarkable developer, Gerry Hines explored so many paths to excellence, including alternative town centers.

One of the exciting things I see going on, though, is it continues on

a trend that San Antonio started, reclaiming the rivers and river beds as a very strong theme for Texas open space. I'll dwell on this for just a moment. I'm very proud of one of my partners from the San Francisco office was a part of the team that created this rather brilliant section that transforms San Antonio and defined for the city a reputation that extends outside of Texas and really, a reputation for the decades—the Riverwalk. Its liveliness has only grown over time. Of course, it has taken a toll on the life of the surface downtown streets.

Now, I'm sorry to say, one can't really talk about cities or about Texas without bringing up oil and America's love with the car. So it's the consumption of oil, as well as its production that we're addressing here. It's great to see the change that is coming. Beginning in 1983 with the implementation of the Dallas Area Rapid Transit which brings together the 13 cities within the Dallas/Fort Worth area, providing 44 kilometers of transit system carrying, I think the latest statistics were 58,000 or so people every weekday and with more extensions to come. And yet it continues to be the case that we drive more miles on fewer highways. And with the growth that Fritz is referring to, how will we handle this in times to come?

In Texas one also has to talk about the genius of becoming an inland port. The logistic centers around Dallas and Fort Worth clearly speak to the ways in which goods, freight are moved efficiently. We're not just talking about moving people when we talk about transportation and the resources it consumes, but moving freight as well. There's clearly a message here that others can learn from.

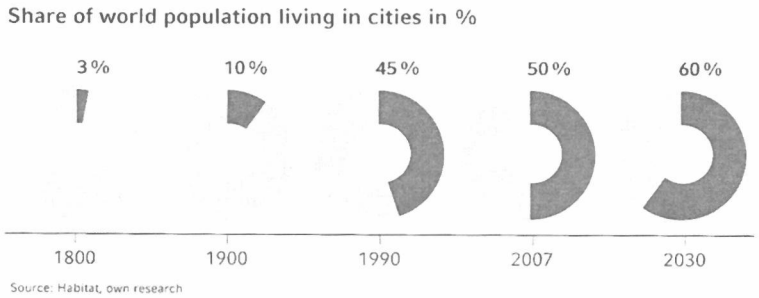
There was a missed opportunity which may come around again that I had the privilege to be a part of many years ago. As a young professional I had the opportunity to be the design leader for architecture for the Northeast Corridor Improvement Project, which was fixing up train stations between Washington and Boston, where the incredible romance of the railroad that once was, was able to come back again and AMTRAK played a strong role. Not a European quality role yet, but a strong role in connecting the major cities of the northeast corridor.

I came to Texas, I must say, not knowing what I was getting into. It seemed like a no-brainer: Dallas to Houston, Houston to San Antonio, back up to Austin and all around. The Texas Triangle in an earlier definition seemed like a fabulous idea. It's flat. There's lots of land. How easy could it be to have a railroad do this? However, it was proposed by the private sector, not a dollar of public money was intended to go into it at this point. The idea was killed by a few very powerful people who flew airplanes who perceived that the trains, rather than being part of a competitive advantage strategy, would actually be a competition that might delve into and hurt airline traffic. So I'm happy to see that that intrastate oligarchy is being replaced by new thinking about new sets of connection for Texas.

Before we focus more on architecture in the city and Texas, let's take a quick look at what's happening on the scale of the world. Fritz has already

mentioned several of these things. I'll give you some graphics to support it. Census Bureau originally projected that this would happen sometime in 2007. It crept a little forward and happened in the beginning of the year 2008. The first time that the blue line, the urban line, and the green line, the rural line, crossed—the rural population and the urban population for the first time were equal to each other. As we have seen, that difference will continue to grow over the years ahead. It happened when the world reached a population of 6.6 billion.

This is a rapid increase in the percentage of people living in cities. You



see in 1800 across the world it was very few. By 2030 it will be 60 percent or so. And projections are that that will continue to climb.

In 1950 there was only one city that had a population of more than 10 million. In 2015 there will be 21. The number of urban areas with populations between 5 and 10 million that's essentially Dallas and Houston if you think of them as metropolitan areas will grow from 7 to 37, although the big growth will be mostly in developing countries. In fact, as much as we have heard about the mega-cities, much of the growth will be in the second and third-tier cities which can better accommodate the incoming populations.

There's a reason for this which has to do with the broad definition of sustainability, economy, social advancement and environmental responsibility. Urban-based economic activities are 50 percent of the gross domestic product for all countries. And in urbanized countries that percentage is more than two-thirds, more than three-quarters and increasing. So the cities indeed are the places of opportunity.

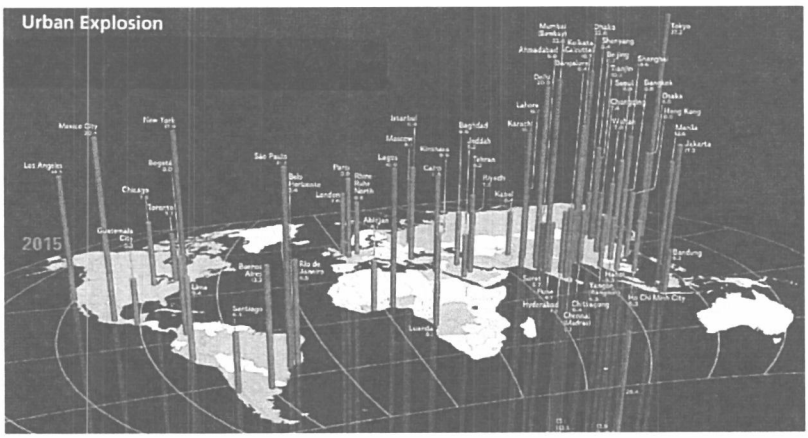
Here in agrarian America, it is becoming ever more clear that we need to understand the role that cities play in our economy just as the Europeans have understood very early and others are coming to understand, as well. It's a competitive world out there. This reminds us of how competitive places around the world are, how hard cities are working to make a good, strong life for their individual people and yet we are all tied together and need to work on it together.

I tried to think of a way and this actually comes from work from the Rockefeller Foundation of making this tangible. What does that growth

mean? So if we say that between now and 2050, mid-21st century, two-and-a-half more billion people will live in cities. Let's just say they're going to live in cities of one million each. Metropolitan area of San Antonio is about 1.9, so half of San Antonio. We will need to build 2,500 additional cities in 43 years. And 2,500 additional cities in 2,236 weeks means that there is the equivalent of a new city every week for the next 43 years, a city half the size of San Antonio. Is this possible? How can we do it? And how can we still make it a human and equitable experience? These are extraordinary challenges.

It is this growth and urbanization that's putting enormous pressures on already limited resources. The demographics are shifting rapidly. Some countries are young. Some countries are older. Birthrate is down in Europe. When you go to any place in the Middle East it's extraordinary how young the population is. Everyone needs a well-trained and well-educated work force in order to be competitive. We need to change the way that resources are consumed. And we need to take the attitude of being responsible to future generations in a way we haven't done.

This comes together. And it's the advocacy that I frequently make



in what is nothing less than a leadership agenda that we really need to embrace, which has to do with resources, understanding competitive advantage, supporting the interaction among demographic groups, economically, racially, ethnically and in all forms, but nonetheless remembering that it is also place based. Rather than becoming like everyone else, each city in the world has a responsibility to define its identity based on its economy and its special resources if we are to succeed around the planet.

To me, Shanghai, New York, Los Angeles, they're actually very, very similar. You can take a picture of the lower east side of New York a hundred years earlier and you can see all the same characteristics in the street. The incredible energy of people determined to make a better life.

So coming back home, I'm going to talk about the United States for a few moments. What I chose to pull out for you this morning basically comes from work the Brookings Institution has been doing in a series of

publications, the most interesting of which is called, *Metro Nation.*

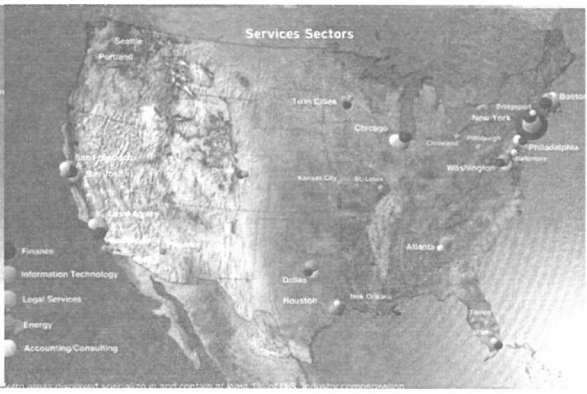
In this report, the Brookings is making the argument that it is time for the United States to move to an urban agenda. You'll see why as I go through the next few slides. They took the 100 largest metro areas in the United States ranked by the number of jobs and came to the following interesting finding.

These hundred metropolitan areas are 12 percent of the land area and

THE 100 LARGEST METRO AREAS, BY 2005 EMPLOYMENT

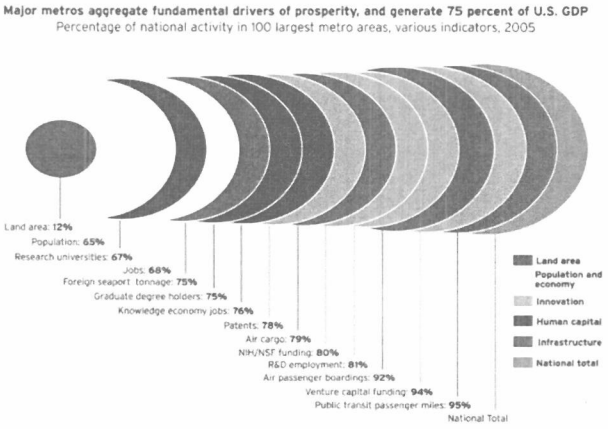
65 percent of the population and in fact, 75 percent of the economy. In addition to this, it's 78 percent of the knowledge workers, 81 percent of the new patents, research and development and 95 percent of transit ridership, which is a synonym of an odd metric, but one that loosely, I think correlates with the idea of a compact and walkable urbanism that promotes energy efficiency. So there are real values and we need to understand the reality of this.

That isn't, as I said earlier, to say that all cities need to be alike. These



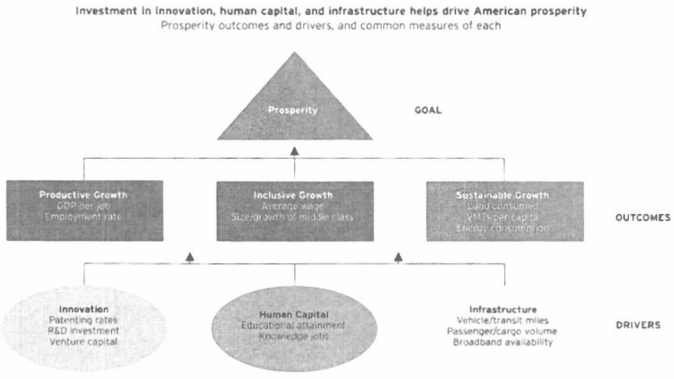
are a couple of maps from the Brookings report that shows how the successful cities across the country are specializing in services, in manufacturing and other things that have to do with their own work force and with their very specific opportunity. Bob Yaro and America 2050 have also looked at those cities and have grouped them into regional clusters of which the Texas Triangle is one. Dallas/Fort Worth, Austin, San Antonio, Houston—a remarkable zone of activity.

In case you're wondering where Texas places in the 100 metropolitan



areas, it places surprisingly high. Dallas/Fort Worth has 2.9 million jobs and 5.8 million population with a gross domestic product of 300 million. It's fifth. Houston, including Sugar Land and Baytown, is ninth. San Antonio is 35th. Austin/Round Rock is 39th. So there's very great opportunity here in terms of the economy and work force for Texas to continue to survive and thrive as we face the challenges of bringing another 100 to 140 million I assume Steve is going to tell us a little more about that additional people into the United States.

This is Brookings' diagram of the assets that lead to prosperity. And it really sets up the next few comments that I would like to make. Innovation, human capital and infrastructure are the key ingredients to prosper-



ity for America's metropolitan areas, as for metropolitan areas around the world. And that needs to have our focus as designers and as leaders.

Now back to the Texas Triangle. I'm going to just pull forward some examples from the work that we and others have done to illustrate how five key initiatives might translate to the Texas Triangle and to Texas: infrastructure investment, compact development with walkable communities, first quality public realm, education and energy policy.

For the first, infrastructure, I'd like to talk about Singapore. Singapore is an island of 4 million people. As we just saw, that's smaller than the Dallas metropolitan area, Dallas/Fort Worth or the Houston metropolitan area. But with style of leadership and their commitment to move a country forward in a matter of four decades, they have made huge advancements and have taken great advantage of investment in infrastructure, as well as in human capital. Singapore doesn't just build an airport. Singapore builds an airport that is a gateway to the world. We had the opportunity to work with them in doing this project which is called Terminal Three. It's very close to the downtown, a ten-minute ride. Singapore is a degree off the equator, so we proposed to them that we ought to be able to light all of the public spaces of the terminal with natural light from seven o'clock in the morning till seven o'clock at night by a series of flaps that open and close actuated by nothing more complicated than the same kind of light sensors that turn on street lights at night.

The Singapore government, not exactly trusting crazy architects but willing to invest in something that was cutting edge, built a full-size bay of this terminal it's about the size of the Grand Ballroom here but twice as tall on site as a mock-up and operated it for a year to find out whether our projections about light coming into the space would work. Indeed, they did. And indeed, Singapore has opened, to the pride of its citizens, a striking new airport which will continue to advance Singapore's role as a very small country in a very large world. We're trying to do this in New York with the station to honor Daniel Patrick Moynihan. We hope it might happen now with the economic stimulus package.

Denver is doing it in a way that I think has great relationship to the things that you've initiated in your transit systems in both Dallas and Houston. Denver's 22 regional communities voted to tax themselves, not believing that there would be new-start money coming from the federal government in order to create a commuter rail system, a light rail system and to center it on their historic Union Station in a mixed-use, very attractive urban neighborhood. It's a tremendous vision. And Mary Margaret Jones and I are working to help them implement it.

Compact development and walkable communities—this comes in all scales. I can't help but bring something from New York because I see that Dallas is beginning to come to terms with the idea of living at density and in high-rise, as well. This was a project on 9.8 industrial acres where we were able to put together 5 million square feet of development, most of it residential development, but to devote half the site to open space

animated by lots of activities in the public realm. Density does not mean covering every square foot. It means balancing building footprints with wonderful open space that makes it a terrific place to live. That's happening elsewhere.

One example that I'd like to call to people's attention is Stockholm. Stockholm is quite an amazing city. To be a city of a million actually gives you very interesting opportunities. In Stockholm the entire energy for the city is 80 percent renewable from renewable sources. You've seen those wonderful wind turbines out in the water. Wind turbines, folks, are coming closer into cities now. They are very compatible neighbors and they are something that we should all be thinking about. In addition, the City of Stockholm has 75 percent of its trips to the downtown, not just to work, but to the downtown, on public transit. Its new infill communities are living up to this overall standard and carrying it forward. And you, as a resident in Hammersby Village in Stockholm, are required to separate your garbage into four categories, organics, combustibles. They are vacuum-tubed away, collected at a central control point and then delivered either for composting or for burning for energy. This is the way that this particular culture and community achieves that extraordinary use of renewable energy. It's something to be emulated.

First quality public realm. You all are working on this here and Chicago Millennium Park, I think, is the most extraordinary example of it right now. Designers talk about the idea of creating spaces that truly bring everybody together that don't belong to the few who live nearby, that welcome a broad range of immigrant, refugee, moderate income, poor together with those who classically have enjoyed the benefits of both our open space and city beautiful open space. Millennium Park is the great example of this. It's quite extraordinary to see this place absolutely overrun from Memorial Day until sometime in the fall. In addition to which, it's spurred incredible residential development through the south loop and contributed to great increase in value in these properties immediately adjoining it. A very important aspect of our futures.

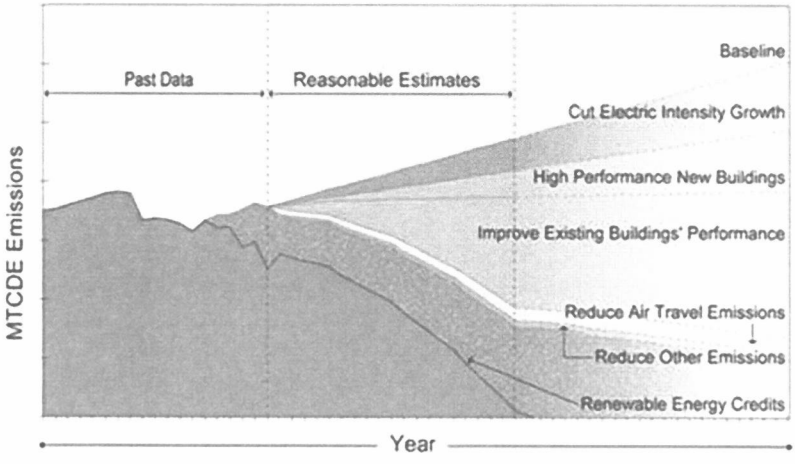
Education. Columbia University is building its new campus, not a campus of gravitas and bricks and mortar but rather, a campus of glass and open space that will welcome everyone in the Harlem community to share, to feel that they can be a part of this education, either as a visitor, as a guest or as a person coming to learn. When we look at the crisis right now and I say this now as a dean if you don't have anything else to do with your money you can give it to Fritz so that more people can come to school or you can send it up the road to Philadelphia to the University of Pennsylvania. If there was ever a time when we all, who have had the benefit of such extraordinary educations, need to give back so that others can have the opportunity to advance in their education, this is it. While the endowments go down we still need to open our doors and bring the best people in.

Energy. I don't have time to go into this in detail here. It is amazing

to me how quickly the consuming public has adapted to green buildings. Back in the mid-70s Ian McCard and others knew all of the things we know today about what we needed to do to conserve resources. But it wasn't a popular idea. It hadn't met its place in the market yet.

When we find ourselves going to meet a client more often than not now he's saying to us, I want a green building; I want a building that goes beyond the scoring system and LEED; I want something that I can be proud of; I want something because I know it's going to have more value in the marketplace if I make it green.

If you look at this slide closely you'll see that new buildings are a very



small part of what we need to do in order to really achieve the kind of after peak oil, post carbon emissions world that we're targeted to. We have to think about city form. We have to think about retrofitting existing buildings. We have to think about how we travel, how we live, how frequently we get in the car. There are many, many pieces in addition—and I think there's every reason to be optimistic about this—to exploring the opportunity for new and renewable sources of energy. Between supply and demand we can do this if we put our hearts and souls into it.

Coming back to Texas on a quick wrap-up here, the Urban Land Institute, which is a research and education institution that serves the real estate community in all of its aspects has been trying to focus in on this very issue and say, What is it that we can do about this, How can we move just beyond the individual buildings to something larger? We came up with a formulation called CLUE which is that we would like to see the issues of climate change and energy production and consumption tied together explicitly with land use. As we move forward to create an urban agenda for America through the Transportation Bill, through the Economic Recovery Act, through new sources of energy it's important that we tie these things together and not think of them as separate and individual activities.

What does that mean? It means we need to understand and help make

the case for the benefits of being green. We need to understand that investment in infrastructure is just that. It's an investment. It's aimed at a return. It's not just widening the highways and fixing the intersections. It's thinking about the value capture and the additional benefits that could be gained for every dollar we put into a transportation project.

Existing buildings. As I said earlier, we focused on how to deal with new ones. We haven't yet advanced as much as the Europeans have in thinking about how we retrofit existing buildings. The cost of demolishing is taking things away. It always removes the heart of things that are part of our culture, our history and our legacy. We need to put this back on the list in a bigger way.

Edge development. We talk a lot about the return to center city, the filling in of the suburbs. In fact, in the open spaces of America where land is cheap there will continue to be edge development. It does not have to be sprawl. We can think smart about what our edge cities are like, serve them with transit, not just to encourage their growth but to tie them more completely in the metropolitan areas.

Infill development. Yes, come back and live in the city; be a part of history in the most effective and walkable communities. Mixing land uses meaning mixing uses and economics, including affordable housing in neighborhoods where everybody can come together and build community and dealing with the regulations that hamper us from doing this. Much as we love our state DOTs, they always require the lanes too wide, too many lanes, too high speed travel. And we need to think very differently if we're to move forward and face the challenge.

J.C. Nichols from Kansas City was one of the founding members of the Urban Land Institute. In fact, I'm trying to figure out what those guys did in 1936 because it was in the middle of the Depression and I don't think there was a whole lot of development going on. But apparently, one of the things they did was they got in their cars and they drove around and they looked at each others' projects. And they as land owners from the heart of America, said things like, "An intelligent city plan thinks impartially for all parts of the city at the same time." Now, think city plan, think metropolitan plan, think Texas Triangle Plan. And let's not forget the greater needs of tomorrow in the press of today. That's what I hope we'll do. I look forward to hearing the other speakers today. Thank you very much.

Speaker Marilyn Taylor, Dean, University of Pennsylvania School of Design. Photo by member John Gullett.

Texas Population Changes and the 2010 Census

Steve Murdock

Dr. Murdock: It's a pleasure to be here back in Texas. What I want to do is to talk about U.S. and Texas demographics. I'm supposed to talk primarily about Texas demographics, but I think we've got to talk about how they fit together in terms of factors that will likely impact architecture. That includes not only the number of people but the socioeconomic characteristics of people.

Now, you'll have to excuse me because I have a tendency towards the end of my presentations of getting just a little bit preachy. But if I do so, as many other demographers in here know, I have a right to do so. That's not arrogance, that's because I am a demographer. Probably everyone in here knows that demography is a divine calling. We know it is because there's a book of Numbers in the Bible and it's all about censuses. So you can see that we're correct about that.

But what I want to talk about and I'll probably only get through several of these, not all of these are the rates and sources of population growth in Texas and the United States. I want to talk about the increase in the non-Anglo population which I argue is the most important factor impacting Texas and the nation. In fact, many of you know that I have for years said that Texas is a preview of things to come in the country. If anything is more logical, more obviously now than it was ten years ago it is this very factor. Recent projections done by the Census Bureau indicates an increasing tendency for the U.S. to look in the future like Texas does today. And we'll talk about the aging of the population, something that's increasingly difficult for some of us to talk about here. And we'll talk about socioeconomic development. Then if we have a little bit of time I've got to plug the 2010 census and the need we have for people like you to help us.

Well, let's start off by looking at population change. I want to begin by apologizing for some slides that will look just like this. I have a friend who says What I love about you, Murdock, you put about 600 numbers up in front of a bunch of people and you say, 'As you can plainly see'.

Well, this is one of my as-you-can-plainly-see slides. What I want you to see here is that in every decade since Texas first allowed the U.S. to join

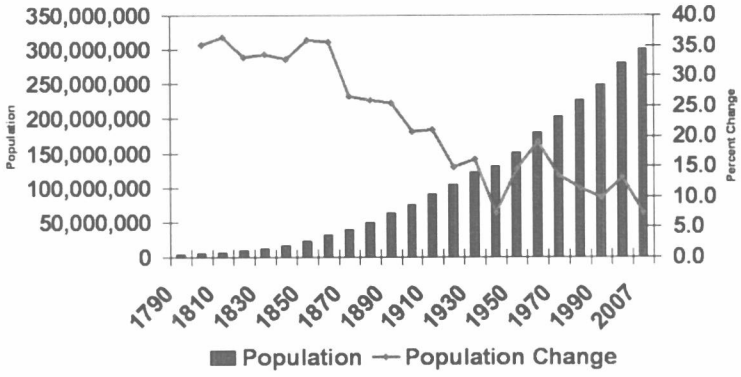
Total Population and Percent Population Change in Texas and the United States, 1850-2007

Year*	Total Population		Percent Change	
	Texas	U.S.	Texas	U.S.
1850	212,592	23,191,876	---	---
1860	604,215	31,443,321	184.2	35.6
1870	818,579	39,818,449	35.5	26.6
1880	1,591,749	50,155,783	94.5	26.0
1890	2,235,527	62,947,714	40.4	25.5
1900	3,048,710	75,994,575	36.4	20.7
1910	3,896,542	91,972,266	27.8	21.0
1920	4,663,228	105,710,620	19.7	14.9
1930	5,824,715	122,775,046	24.9	16.1
1940	6,414,824	131,669,275	10.1	7.2
1950	7,711,194	150,697,361	20.2	14.5
1960	9,579,677	179,323,175	24.2	19.0
1970	11,196,730	203,302,031	16.9	13.4
1980	14,229,191	226,545,805	27.1	11.4
1990	16,986,510	248,709,873	19.4	9.8
2000	20,851,820	281,421,906	22.8	13.2
2007	23,904,380	301,621,157	14.6	7.2

* All values for the decennial dates are for the indicated census year. Values for 2007 is for July 1 as estimated by the U.S. Bureau of the Census.

Source: Derived from U.S. Bureau of the Census Estimates for dates indicated by the Texas State Data Center, University of Texas at San Antonio.

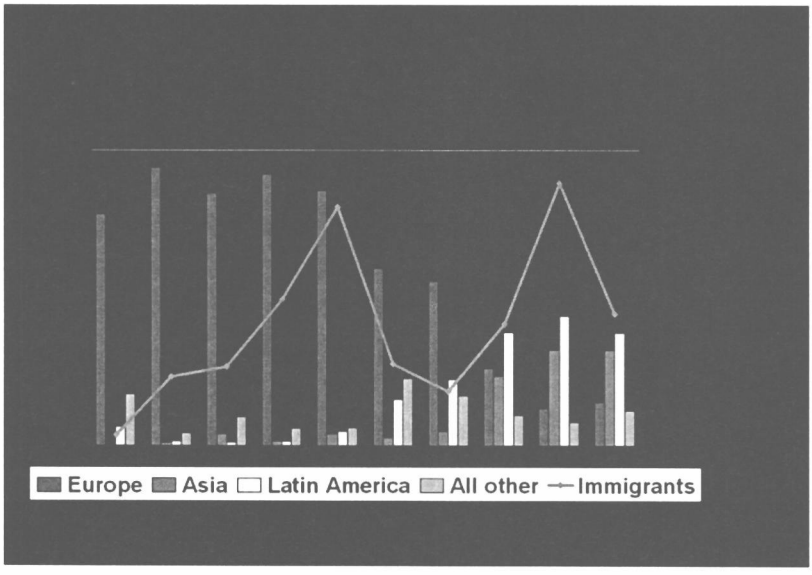
Total Population and Percent Population Change in the United States 1790-2007



it, we have grown more rapidly than the country as a whole. And that growth has continued to be there at extensive paces even through the most present period of time for which we have data, which is 2007.

I want you to note that for the country as a whole there has been a different pattern. That red line there is the patterns of growth in the U.S. And in general, those patterns of growth have been down not down compared to many other developed countries of the world, but certainly down over time from the 30 percent range per decade, for example, down into the

teens and below in some of our most recent decades. You know, populations grow from one of two mechanisms, natural increase, the excess of births over deaths, and as a result of immigration. And if you're talking about Texas, that could be as well migration, meaning migration from other states. But if you're looking at the country as a whole, we're talking about immigration.



Here, the red represents immigration. I want you to note the period of the greatest immigration in percentage terms was 1900 to 1910. That's that period when we have all those Ellis Island kinds of photos and those kind of stories. But what's important to note is since the 1940s what we have seen is a substantial increase in immigration for a number of decades. That has some very real meanings in terms of the second factor I'm going to talk about, diversity. The blue line up here represents the proportion of our migrants that were from Europe. Many of us think that is, in fact, the base of America's population. But you'll see that starting in the '60s and '70s, what we've seen is that the majority of our immigration has been from Latin America. Our immigration has been from Latin America and has been from Asia. These are the areas of growth in our immigrant culture. And these are very important because they represent not only changes in heritage in some ways, but they represent changes in lots of factors including in some cases socioeconomic factors.

Have they been important in Texas? Well, this simply shows some of our data broken down into four parts of change now. When you look at a state you have both domestic migration, meaning migration from other states and you have international migration, meaning migration from other countries.

What I want you to notice as you look at Texas is the bottom chart, 2000–2007 is not a full decade like the one above it. So you kind of have

Population Change by Components of Change in the State, 1990-2000 and 2000-2007

	State of Texas
1990-2000	
Numerical Change	3,865,485
Natural Increase	1,922,044
Domestic Migration	1,166,570
International Migration	776,871
2000-2007	
Numerical Change	3,052,560
Natural Increase	1,635,015
Domestic Migration	574,950
International Migration	842,595

Source: Texas State Data Center

Ten Largest States in United States by Population Size in 2000 Ranked by Population Size in 2000

State	1990 Population*	2000 Population*	Numerical Change 1990-2000	Percent Change 1990-2000
California	29,760,021	33,871,648	4,111,627	13.8
Texas	16,986,510	20,851,820	3,865,310	22.8
New York	17,990,455	18,976,457	986,002	5.5
Florida	12,937,926	15,982,378	3,044,452	23.5
Illinois	11,430,602	12,419,293	988,691	8.6
Pennsylvania	11,881,643	12,281,054	399,411	3.4
Ohio	10,847,115	11,353,140	506,025	4.7
Michigan	9,295,297	9,938,444	643,147	6.9
New Jersey	7,730,188	8,414,350	684,162	8.9
Georgia	6,478,216	8,186,453	1,708,237	26.4

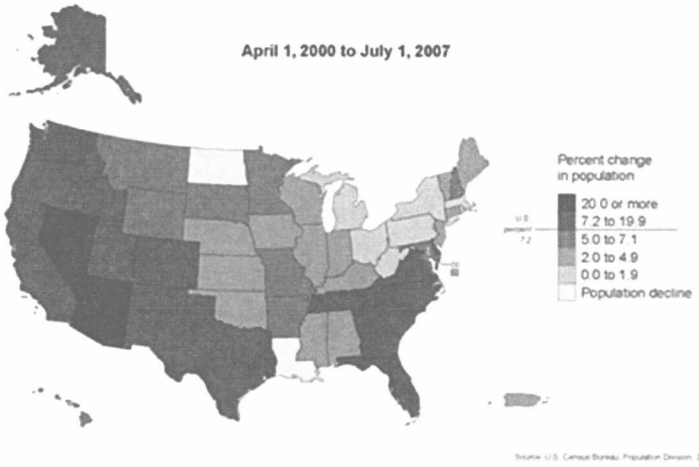
* Population values are decennial census counts for April 1 of the year indicated

to increase it. But one of the things you will note is that from 2000 to 2007 already immigration to Texas is greater than it was for the whole decade of the 1990s. Immigration is an important factor in both Texas and we'll see in U.S. population growth, as well.

Well, let's look a bit at Texas population growth because it has been phenomenal. We'll go through these fairly quickly. This is where the state's ranked in terms of size which is of course the second largest in 2000 and 2007.

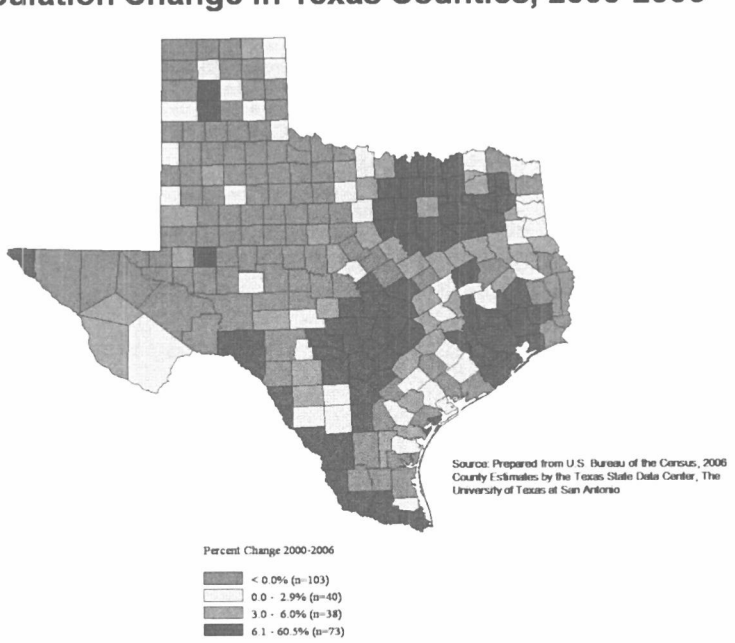
When you look at growth you see some interesting patterns. In the 1990s we were second to California, in terms of total growth, having increased by about 3.9 million people. If you look at 2000–2007 you see that we have increased faster even than California. You'll notice that California is substantially larger in total population. So in many ways Texas is the fastest growing state in the entire country. When you look at it in percentage terms, of course, you'll see a little bit different picture. But you can see that Texas was about eighth-fastest growing in the 1990s. It is, as you can see up there today, about the sixth-fastest growing state, even in percentage terms. So our growth is very, very rapid indeed.

Percent Change in Population for States and Puerto Rico: 2000-2007



It is part of a larger structure and larger issues set of issues. If you look at the growth in the United States there are two regions of the country that are growing most rapidly, the South and the West. The Northeast and the Midwest in many cases are having great difficulty in retaining population bases. That dark purple and darker color yet are those parts of the country that are growing fast fastest. The regions of the West and the South are, in fact, the regions of the country that are growing.

What about Texas? The dark blue up here represents the fastest-growing parts of Texas. There are really four parts of Texas that for the last 28 or so years have been the fastest growing in the country. Those are the Dallas/Fort Worth area, the Houston/Galveston area, the San Antonio to Austin area I know there's some people in Austin that think it's the Austin/San Antonio corridor but I checked with everybody here in San Antonio and they've assured me it's the San Antonio to Austin corridor—and the area along the Texas and Mexico border basically from Laredo down to Brownsville and McAllen. As I said, for nearly 30 years now these have been the fastest growing parts of the State of Texas.



The interesting thing to note, however, is that the number of counties that are declining while we are growing has actually increased over the last few years in terms of pure numbers of counties. If you went back to 2000 we had about 68 counties that were losing population. When you look at the most recent data you see about 100 counties that are losing population today. So not only is our growth increasing, it is increasingly concentrated in those large metropolitan centers of the state.

Well, let's talk a little bit about diversification. I get a lot of flack when I go around the country and I talk about Texas and the U.S. because I always show a lot of these comparisons. But I try to explain to my people from other states that the only reason I show these kinds of charts is because we in Texas like to compare ourselves to other nations.

Just take a minute to look at this. Notice, for example, in Texas, or if you look in the U.S. the slowest population growth is in Anglo or non-Hispanic white populations. In the United States it's only 4 percent now this is going back to the '80s. And why do I show that far back? Because this is not a new trend. This is an ongoing, long-term trend. If we look at the 1990s what do we see? Well, if you look at the country as a whole, for example, the growth of the Anglo population went way up from 4.2 to 4.8 percent. That still needs a doubling time of 150 years plus if you look at the doubling rate. In Texas the Anglo population growth rate actually went down from about 10 to about 7.8 percent.

Looking at the most recent period of time now, again, remember to make this comparable to the earlier years you've got to add about another third to it—but you can see that still the growth is much less in the Anglo

Population, Percent Change in Population, and Proportion of Population by Ethnicity for Texas and the United States, 1980 and 1990

Ethnic Category	Number		Percent Change 1980-90	Proportion of Population	
	1980	1990		1980	1990
		Texas			
Anglo	9,350,297	10,291,680	10.1	65.7	60.6
Black	1,692,542	1,976,360	16.8	11.9	11.6
Hispanic	2,985,824	4,339,905	45.4	21.0	25.6
Other	200,528	378,565	88.8	1.4	2.2
Total	14,229,191	16,986,510	19.4	100.0	100.0
		United States			
Anglo	180,602,838	188,128,296	4.2	79.7	75.7
Black	26,091,857	29,216,293	12.0	11.5	11.7
Hispanic	14,603,683	22,354,059	53.1	6.5	9.0
Other	5,247,427	9,011,225	71.7	2.3	3.6
Total	226,545,805	248,709,873	9.8	100.0	100.0

Source: Texas State Data Center using 1980 Census Sample Data and 1990 Summary Tape File 1 (STF 1) – 100-Percent Data

Population, Percent Change in Population and Proportion of Population by Ethnicity for Texas and the United States, 2000 and 2007

Ethnic Category	Population		Percent Change	Proportion of Population	
	2000	2007	2000-2007	2000	2007
		Texas			
White Alone Non-Hispanic	10,986,965	11,443,618	4.2%	52.7%	47.9%
Black Alone Non-Hispanic	2,378,444	2,729,864	14.8%	11.4%	11.4%
Hispanic	6,669,666	8,600,399	28.9%	32.0%	36.0%
Other Non-Hispanic	816,745	1,130,499	38.4%	3.9%	4.7%
Total	20,851,820	23,904,380	14.6%	100.0%	100.0%
		United States			
White Alone Non-Hispanic	195,575,485	199,091,567	1.8%	69.5%	66.0%
Black Alone Non-Hispanic	34,313,007	37,037,204	7.9%	12.2%	12.3%
Hispanic	35,305,818	45,504,311	28.9%	12.5%	15.1%
Other Non-Hispanic	16,227,596	19,988,075	23.2%	5.8%	6.6%
Total	281,421,906	301,621,157	7.2%	100.0%	100.0%

Source: U.S. Census Bureau.

population than in other population groups. The growth is really greatest in Texas in the Hispanic population. But that is not a Texas-unique phenomena, as we'll see in just a few minutes.

Similarly, when you look at the growth, for example, in the United States you see that increase that has occurred of about 20 million people from 2000–2007. About half of that growth is due to the Hispanic population that represents 15 percent of the total U.S. population. In fact, this shows Hispanic population growth by various states. You can see that it's a very pervasive pattern.

Hispanic Origin Population (1000s) in 2000 and 2007 and Percentage Change for Top 20 States in 2007

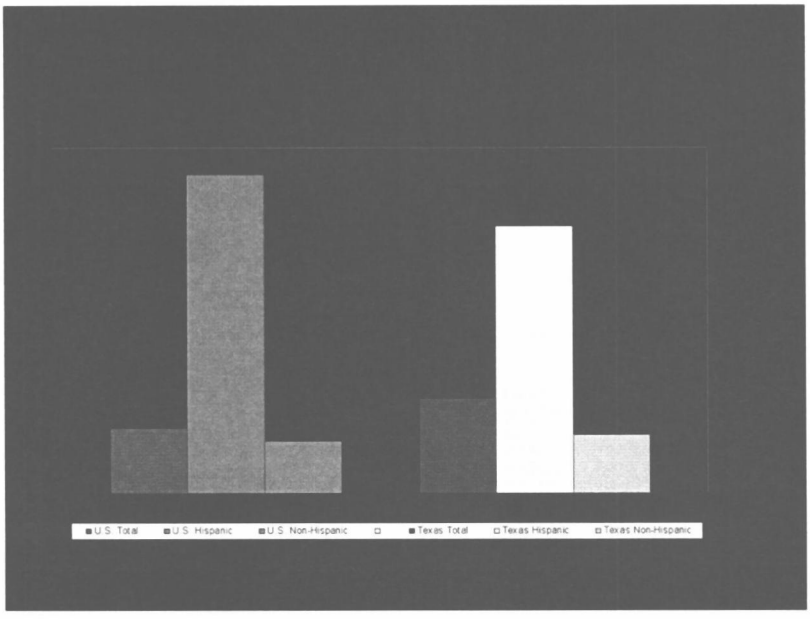
	2000 Census	2007	% Growth 2000-2007
California	10,967	13,221	20.6
Texas	6,670	8,600	28.9
Florida	2,683	3,756	40.0
New York	2,868	3,162	10.3
Illinois	1,530	1,920	25.5
Arizona	1,296	1,878	44.9
New Jersey	1,117	1,382	23.7
Colorado	736	966	31.3
New Mexico	765	875	14.4
Georgia	435	741	70.3
Nevada	394	644	63.5
North Carolina	379	638	68.3
Washington	442	610	38.0
Pennsylvania	394	556	41.1
Massachusetts	429	528	23.1
Virginia	330	508	53.9
Connecticut	320	403	25.9
Michigan	324	403	24.4
Oregon	275	396	44.0
Maryland	228	356	56.1

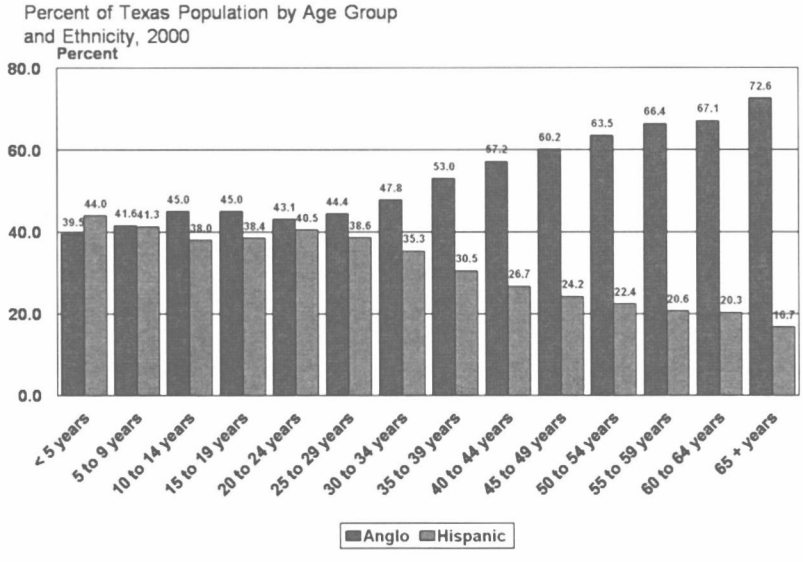
Source: U.S. Census Bureau, Census 2000 from Summary File 1 Table QT-P9; 2007 from Population Estimates, Table SC-EST2007-04

Now look there at Georgia. Georgia in 1990 had about 100,000 Hispanics. By 2000 you can see it had 430-some thousand. And by 2007 you see 741,000 Hispanics. You also see large numbers in North Carolina and in Texas again, of course, you can see the tremendous growth that we have had in the Hispanic population. Well, why is this? What colleagues of mine, Ken Johnson and Dan Lichter, have done some work recently showing the change in population growth of the United States from 2000 to 2005. Remember at the national level the Hispanic population is 15 percent of the total population. But from 2000 to 2005 they accounted for 49 percent of total U.S. population growth, they accounted for 53 percent of immigrants and 47 percent of natural increase, that excess of births over deaths.

And this gives you some idea why. This is birth-to-death ratio. If you look at the green up there that's basically, the non-Hispanic population of the United States, all other groups except Hispanics. And you can see that the ratio of births to deaths is about 1.3, 1.4 births per death. The ratio for Hispanics is eight to one. For Texas it's about seven to one. Now, some of that is higher birth rate, but a large part of it is also a very young age structure. So you're seeing a combination of factors that are leading to this very rapid population growth.

Let's talk about age for a few minutes. As I said, this is something I find increasingly difficult to talk about. But there are two factors that are taking place in the United States that are very important. One of those is the aging of the Baby Boomers, those people born between 1946 and

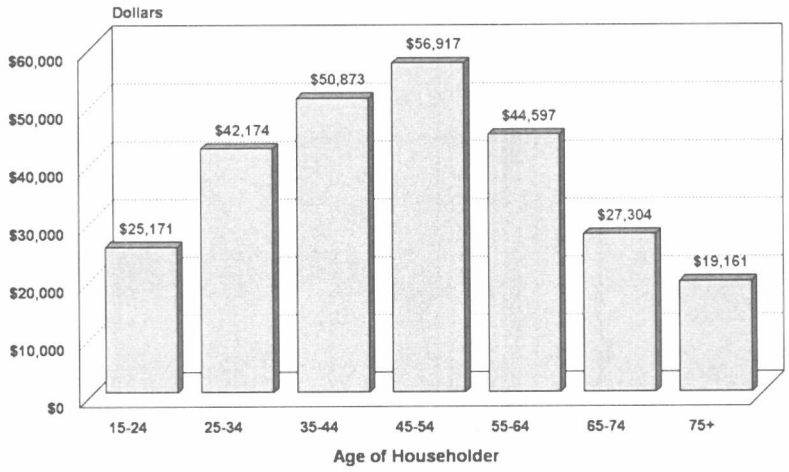




1964. They are basically 25 percent of the U.S. and Texas population and in a very real sense they are a force for the future that we've all heard more about probably than we want to. You can see there in Texas and in the U.S. similar kinds of patterns as that age group or that group has aged forward. I like to say that if you look at the 45 to 54 age group up there you see that Baby Boom, the cutting edge or the forward edge of that Baby Boom population and you see it moving along. Well, this is 2000–2007. Notice that most of them moved into that next stage group showing up

there. And they'll continue to go until we have about one in every five Americans that is 65 years of age or older.

Median Household Income in the United States by Age of Householder, 1999



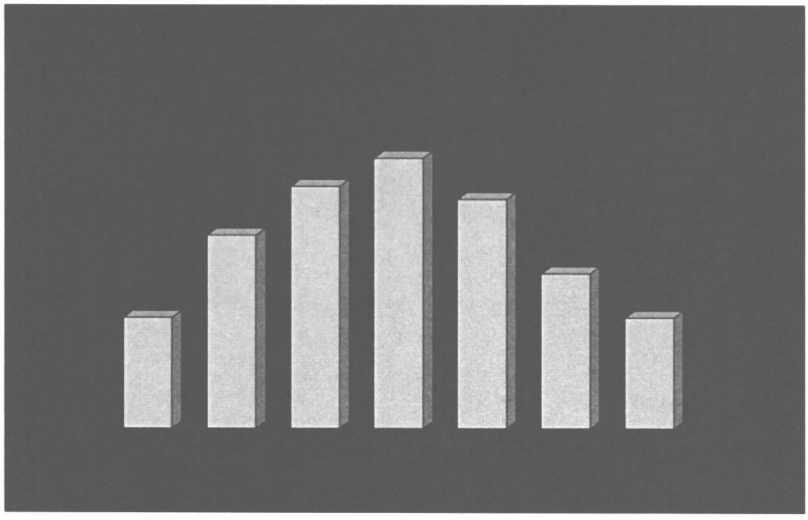
Source: U.S. Census Bureau, Money Income in the United States: 1999, Current Population Report P60-209

There's a clear difference between groups relative to the age structure. Blue up there represents the Anglo population, the red represents the Hispanic population. Go to 65 plus and what you see is that about 70 percent of the population is Anglo. You can see the I mean, yes. Now go to the other age spectrum. What do you see? Now, this does not show African-Americans, Asians or others, but when you get to the less than five what do you see? You see about 40 percent Anglo, about 44 percent Hispanic, meaning the other percentages are African-American, Asian and other.

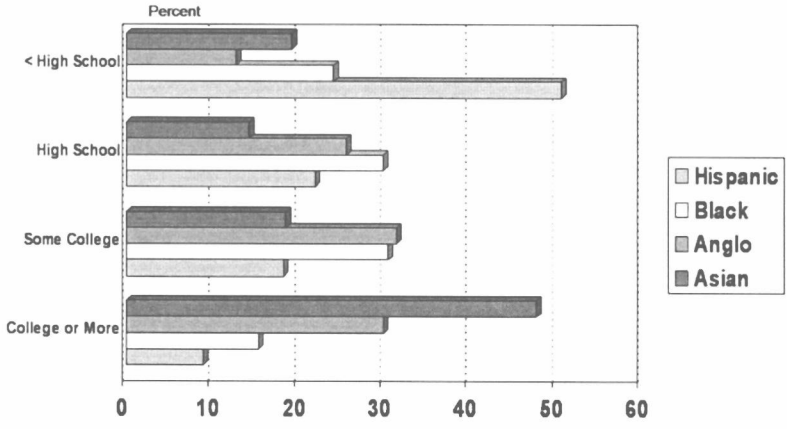
When you look to the future what do you see? If anyone who wonders if the future of Texas is tied to its Hispanic population you need to look at these data very carefully because the answer is clear, at least in a demographic sense, that is the case.

But why do we care about these dull demographic factors, anyway? Why do we care about the age structure? Why do we care about the change in racial and ethnic composition? We care because due to a variety of historical, discriminatory and other factors these demographic characteristics are tied to the socioeconomic characteristics of our population, they're tied to the resources people have to buy goods and services, including energy-related resources in the private sector and they're tied to the resources of people have to pay taxes in the public sector.

What do you see about these relationships? Well, this is a chart that I find very, very, very depressing because it's a chart that shows for the U.S. and we'll see that it's the same for Texas that all other things being the



Educational Attainment in 2000 in Texas for Persons 25+ Years of Age By Race/Ethnicity



same, we make as much money as we're going to make when we're middle aged, we make less money when we're younger and when we're older. I find this a very depressing slide because it indicates that I've already made as much money as I'm ever going to make.

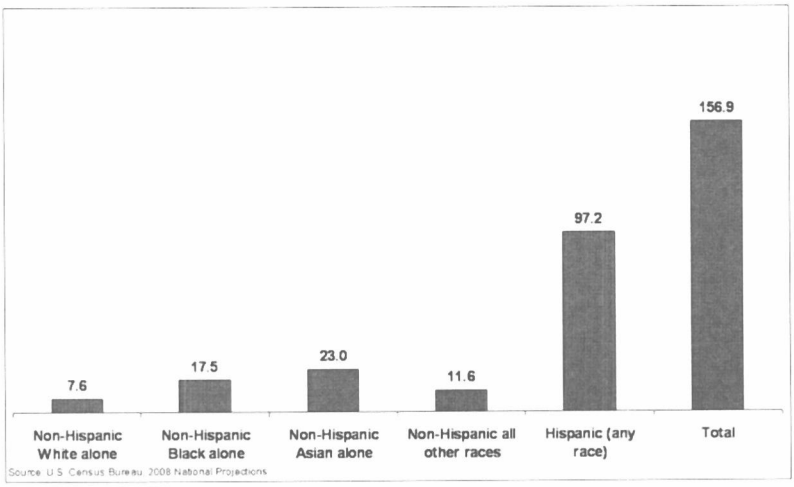
You'll see that this chart is everywhere and always the same. Similarly, if you look at race and ethnicity what you see is nationally the African-American, Hispanic populations make somewhere between 55 and 70 percent of what the population of Anglos does in the United States. If you look at Texas what do you see? Same pattern, you can see that income is the highest in those middle-age age groups. And you can see the differences, as well, that exist in income by race ethnicity.

Also important for Texas is this factor. Many of you are from the edu-

cation sector. The fact is that in 2000 in Texas over 50 percent of adult Hispanics had less than a high school level of education. So the challenges are great.

Well, let's talk about the future. I want to spend a few minutes talking about the U.S. for a couple of reasons. One is you can see that we project that the country is going to grow and grow substantially. This is a more rapid projection than we had in our previous set. And the reason is, growth has been greater than anticipated.

Numeric Change in the Projected U.S. Population by Race and Hispanic Origin: 2000 to 2050 (in millions)

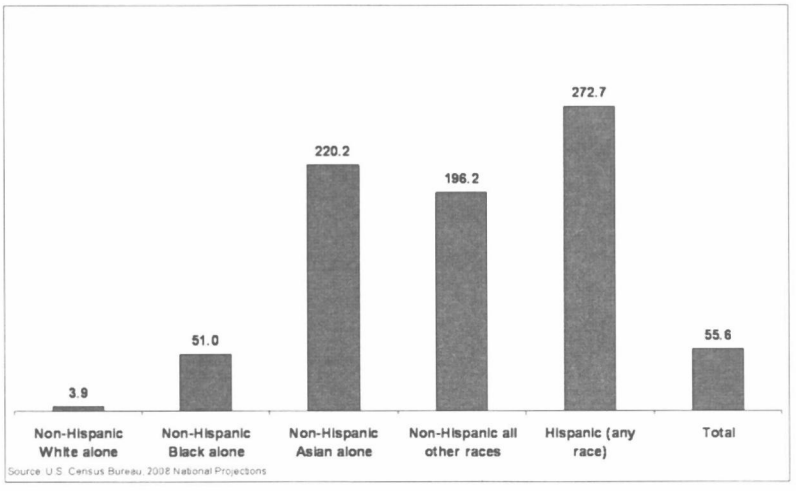


You can see that growth, however, is clearly greatest in our Hispanic populations. This, in fact, is the numerical change in population. You can see we're expecting about 157 million increase and 97 million of that we expect to be due to the Hispanic population. Well, we now project that by 2042 non-Hispanic whites will be less than half of the U.S. population. And, in fact, by 2023 if you take children under 18, over 50 percent of that group will be members of what we now refer to as minority groups. That is, they will not be non-Hispanic whites.

This here simply shows you in percentage growth terms how different we expect those to be. Look over here at non-Hispanic whites, 3.9 percent over basically the next 50 years. So we're seeing a tremendous diversification of the population. Overall, of the net change in population between 2000 and 2050 we expect 62 percent of it nationwide to come about as a result of the Hispanic population. I won't go into this, but to simply show the tremendous differences in the age structure of Anglos and Hispanics and African-Americans, et cetera, with the biggest differences being between a very young Hispanic population and an older Anglo population.

These percentages go across this screen and notice that by 2050 in the

Percent Change in the Projected U.S. Population by Race and Hispanic Origin: 2000 to 2050



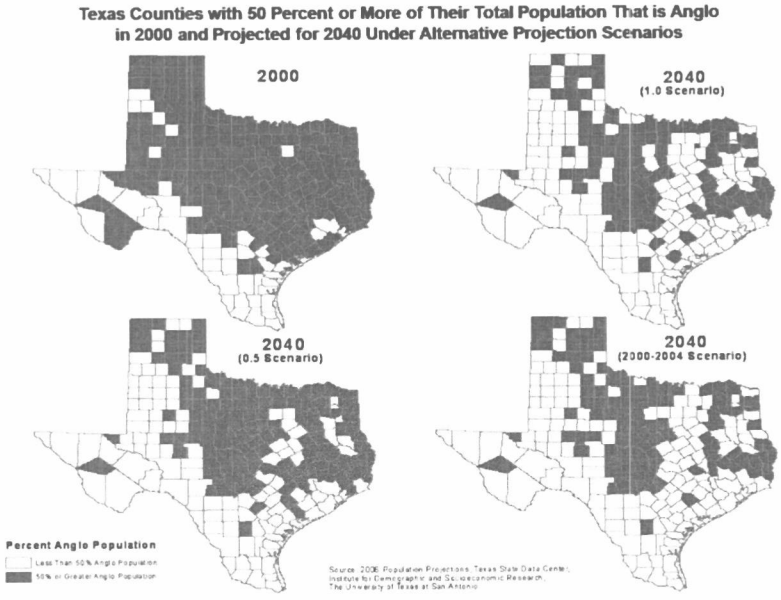
Projections of the U.S. Population by Selected Age Groups, Race, and Hispanic Origin: 2050

Age	(Resident population as of July 1. Numbers in thousands)					
	Non-Hispanic White alone	Non-Hispanic Black alone	Non-Hispanic Asian alone	Non-Hispanic all other races	Hispanic (any race)	Total
Total	203,347	51,949	33,418	17,503	132,792	439,010
Under 5 years	10,449	3,129	1,664	1,822	11,084	28,148
5 to 17 years	28,146	8,297	4,406	4,206	28,370	73,425
18 to 24 years	15,674	4,571	2,532	1,941	14,821	39,538
25 to 44 years	48,345	13,391	8,633	4,599	35,893	110,862
45 to 64 years	48,961	12,618	8,749	3,052	25,109	98,490
65 years and over	51,772	9,943	7,434	1,884	17,515	88,547
65 to 74 years	21,854	4,864	3,724	972	8,698	40,113
75 to 84 years	17,093	3,198	2,582	575	5,945	29,393
85 years and over	12,825	1,881	1,128	336	2,871	19,041

Source: U.S. Census Bureau, 2008 National Projections

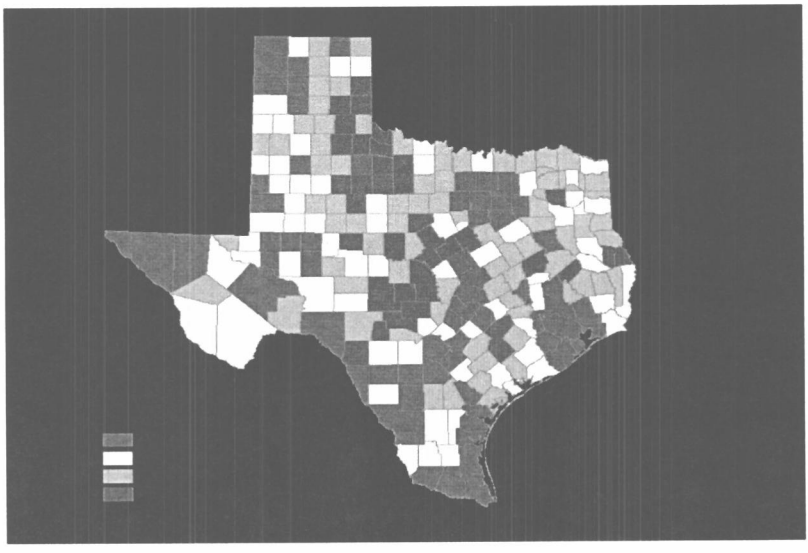
child categories not only is the combination of all the other non-Anglo groups greater than 50 percent, you can also see the number of kids, the percentage of kids, that will be Hispanic in the country will be greater than the percentage of non-Hispanic white kids. We're seeing dramatic changes all the way across.

Let's talk about Texas for a few minutes. Texas is projected to grow very rapidly. We're projecting about a 55 percent rate of growth—these are from my former unit at UTSA and you can see that we expect those trends to occur: growth of over 100 percent in just 2000 to 2040. You begin to see dramatic changes. Did you know that by 2004 we were already less than half Anglo in Texas.? By 2040 basically we'll be somewhere between a quarter and a third Anglo, about 8 to 10 percent African-American, somewhere between about 52 and 59 percent Hispanic with the remainder consisting of members of other racial and ethnic groups, primarily Asian.



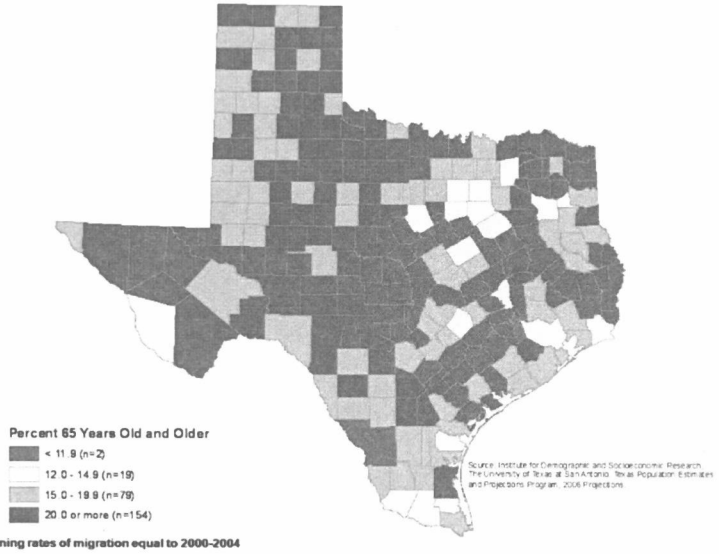
How much will we change? Let's look at the left-hand top chart and the right-hand bottom chart. The blue counties are the counties in which over 50 percent of the population in 2000 was non-Hispanic white. That same pattern on the bottom right is what we expect under one of the projections by 2040. Texas will be increasingly a minority state. We see the same kind of patterns in age structure. By 2040, on the bottom right you see 20 percent of our population will be 65 years of age or older in Texas.

This is 2000. There were 43 counties in Texas that had 20 percent or more of their population that was 65-plus. I want you to note the dark green and blue here. Now I want you to look at those same two colors for



2040. If you think your area is not going to have an older population and we know that older population is going to be primarily or disproportionately Anglo you will see that there's not going to be very many exceptions to that on this map.

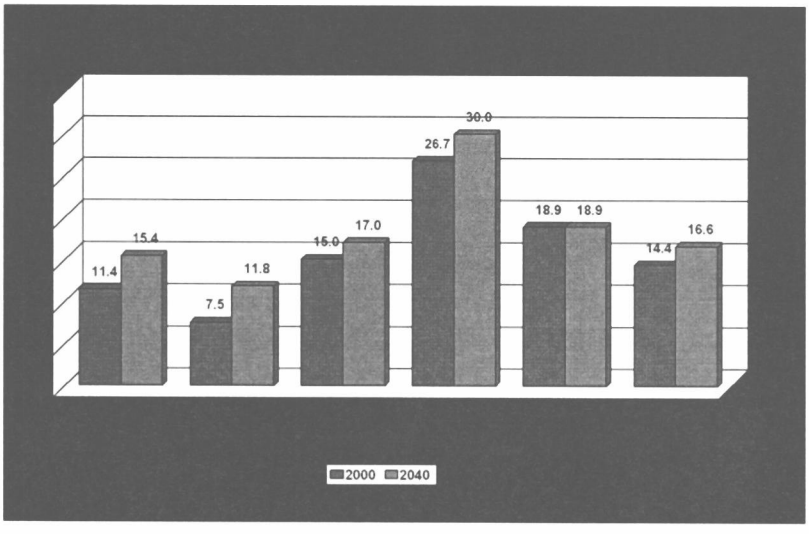
Percent of Persons 65 Years of Age and Older in Texas Counties, 2040*



* Assuming rates of migration equal to 2000-2004

The bottom scenario, the scenario that we last predicted, suggests that from 2000 to 2040 there would not only be a proportional decline but there would be an absolute decline in Texas Anglo population from 2000 to 2040.

Let me conclude with a little bit about what I think are very important implications of this. Many of you know that we did some work, called the Texas Challenge, in which we looked at the socioeconomic implications of

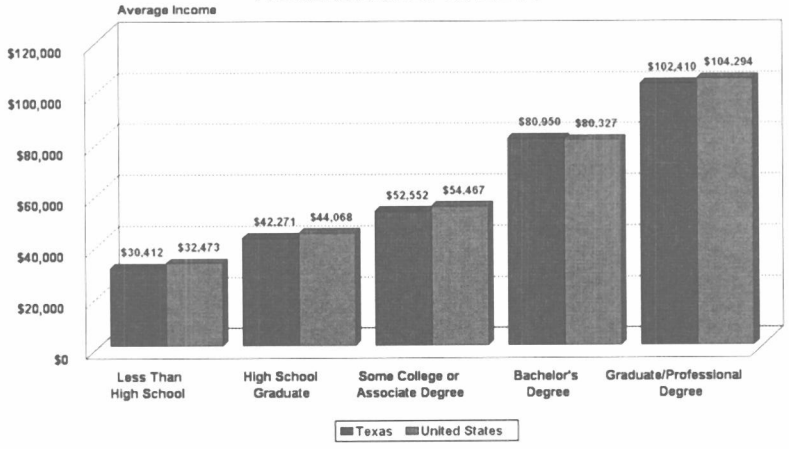


demographic change in the absence through education and other factors of socioeconomic change.

What would it mean for Texas to have this population growth, but not change the differentials that exist between racial and ethnic groups and other groups? Well, among the things we saw was a substantial decline in the income of the state, about $6,500. We see an increase in the number of families in poverty. The red is what we expect in the future versus what was there in 2000 in the blue. We would see a labor force in Texas that, in fact, in 2040 would be less well educated than it is today. We would begin to see an increasing amount of population, of households, of labor force, of elementary and secondary and college education students that would be from non-Anglo populations.

The same thing would be true for household income and for consumer expenditures. Our economy will become increasingly dependant on non-Anglo populations and, in fact, tax revenues will, as well. This slide, which is the same everywhere, shows that education pays.

Average Annual Household Income in Texas and the United States by Educational Attainment of Householder in 2000*

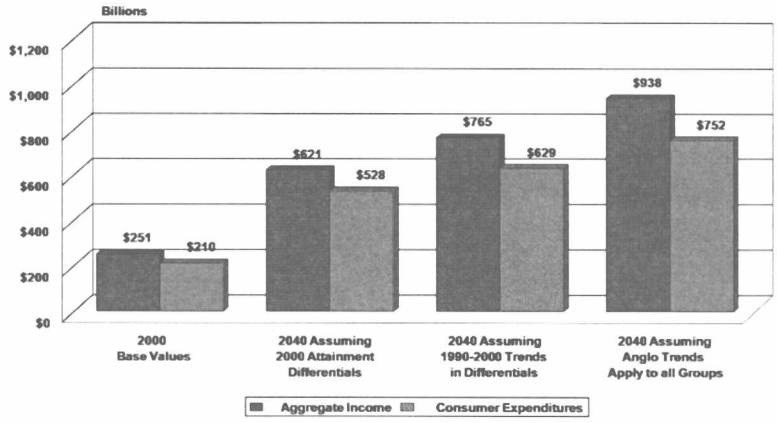


*From Census 2000 Public Use Microdata Sample (1% File)

Now, I am very hesitant to show this particular slide to the school teachers of Texas because it shows the average person with a college degree in Texas in 2000 made about $80,000. Some of our school teachers think there must be a mistake in their withholding taxes when they look at their salaries compared to that.

What happens if we change our education and close the gaps in educational attainment between minority and majority populations in Texas? Compare the second blue column to the fourth blue column and you see some of the difference for simply part of our population, which shows that we could, if we increased the education or closed the educational

Aggregate Income and Consumer Expenditures for Population 25 Years of Age or Older in Texas in 2000 and Projected Under Alternative Educational Attainment Assumptions for 2040*



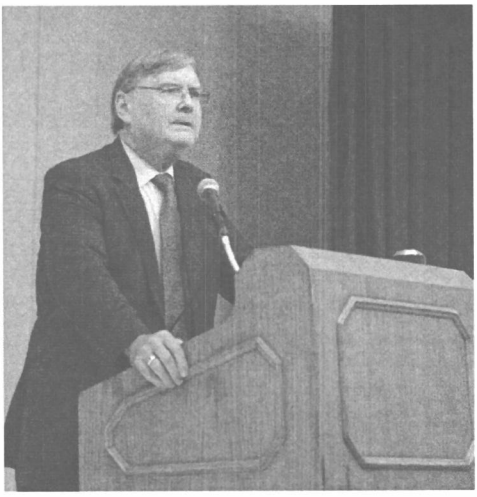
*Source: Texas State Data Center. Projections are shown for the 1.0 scenario

attainment levels, increase the aggregate household income by over $300 billion per year. We could close the gaps relative to consumer expenditures by over $200 billion per year. We can increase state tax revenues about $22 billion per year.

Let me close then with a few slides on the 2010 census. We are starting activities right now and next year we will begin extensive activities to complete the 2010 census. Why are the censuses important? Well, most of you know that it is in a very real sense the basis of our representative democracy. Article 1, Section 2 of the U.S. Constitution requires that we do a census every ten years for a basis for the apportionment of states. That's what this process is about. In addition, $300 billion per year, $3 trillion a decade, of federal funds are distributed to states and local areas on the basis of census data. Getting counted becomes very important in terms of getting your share. It's very critical for all forms of planning, economic development, energy development.

This census is going to be a very difficult one. The last census took place in a period of economic growth and expansion. This one is likely not to be quite as rapid in terms of economic expansion. We have a very contentious immigration debate which is important to use because the Constitution requires that we count everyone residing in the United States, apart from their status as citizens or non-citizens.

We've had a bunch of anomalies in terms of disasters—like Katrina and Ike which are difficult for us because it means counting people is more difficult. We've got a foreclosure crisis that is making it very difficult to know in some cases whether people actually live in those housing units or not. We find that some people get evicted multiple times when they're foreclosed on simply because when they're evicted they have no place else to go and they come back to that unit in order to maintain themselves.



Speaker and member Steve Murdock, Director, United States Census Bureau. Photo by member John Gullett.

So what can you do? You can help us a number of ways. You can let people know that it's safe to respond to the census, that we do not share our data with other agencies. You can work with local groups that exist, I know there's one in San Antonio, there's one in Houston, one in Dallas and other parts. Most importantly you can help us in maintaining the confidence and the cooperation of the American people.

I want to thank you for your time. I want to again request your help, your assistance as we do the 2010 census. More importantly, I think, for Texas as we look at these population changes, I hope that we can all pull together and change the socioeconomic impacts of those demographics with concerted efforts in education and other places so that the future of Texas can not only be one with a larger population, but a more prosperous population. Thank you.

Green Architecture and Sustainability

Steven A. Moore

Dr. Moore: Good morning. I promise to be neither as entertaining nor as quantitative in what I have to say. Before I talk about green architecture and sustainability one of the things I really must say is that I'm delighted to be here to talk to your society. In my own view, the making of the built environment is less an artistic process than it is a political one. And the political process will go on in rooms just like this one with many of the same people who are in this room. I think it's really important that we address the issues that are before us, those that Dean Taylor and Steve Murdock just talked about.

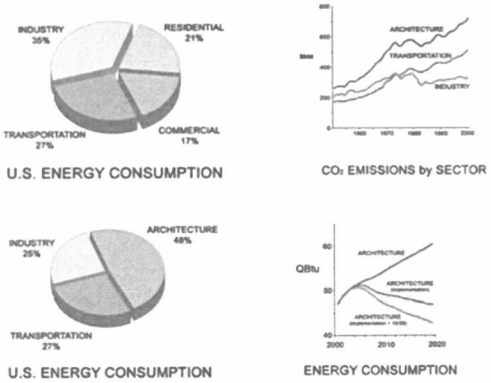
I've conducted an informal and highly unscientific survey with my students over the past 12 years. Each semester when I begin teaching a course, I ask students if they believe that humans are a part of nature or if they are something distinct. And 12 years ago invariably about half the students would say that humans are definitely not a part of nature, but somehow different. As of this year, for the very first time, not one of my students said that humans are not a part of nature. Now this is something of an indication, like Steve's statistics, that our attitudes towards the dichotomy between nature and culture are changing. This is the best news I have to tell you today.

A common assumption is that the sources of our environmental troubles or the source of environmental degradation is generally either industry or transportation. It's the end of tail pipe syndrome. Of course, you know now that's really not the case. Since we've already heard this I'm not going to dwell on it, but as you can see in the images, it really depends on how you slice the data. If you look at the categories of consumption, architecture, of course, is just about half.

What's most alarming is that the amount of greenhouse gas production and the amount of energy consumption that is directly related to architectural production is increasing as all other sectors are decreasing. Clearly, we have a problem here. The problem is one of great irony; those of us who take an oath when we get registered to become professionals say that it is our responsibility to uphold the public health, welfare and safety and we are probably now responsible for the largest threat to environmental well being in the United States.

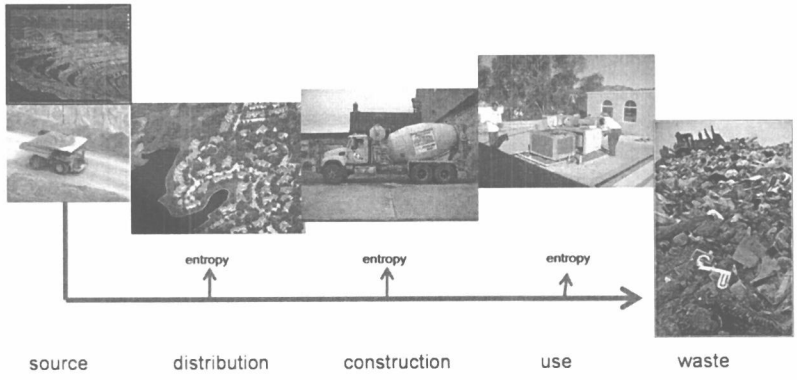
I want to show you three kinds of systems that we can historically look backwards on and talk about. Now, this is what many scholars refer to as

DoE assessment of environmental degradation



perhaps ironically architecture has become the greatest threat to ecological sustainability

the linear *throughput* (or type 1) system



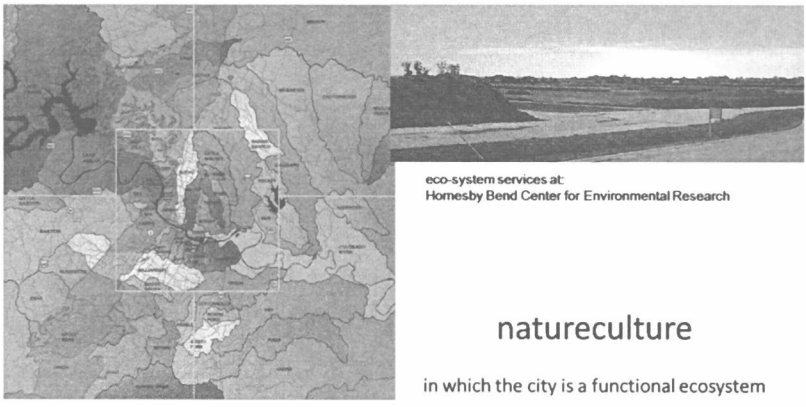
a type 1 system, in which we mine resources in this case it's copper and then we take that copper and we transport it often long distances and we distribute it around a landscape. The landscapes that we make often look like the second image there, which are not very dense.

We like to be beside water so that all of those nitrates and phosphates that we put on our lawns go directly into those sources of water. Then we build things often using technologies like concrete, which is probably the highest greenhouse-emitting process out there. Then we air condition our buildings because we have forgotten how to make buildings that naturally participate in the energy flows of a particular place. In the process we take all of the stuff that we have left over and we throw it in the dump. In any typical building construction system almost 40 percent of the mass of

the building itself goes into the dump. Now, this is an alarming number; absolutely an alarming number.

The good part is that there may be an alternative. Like my young students, we can simply begin to get over our nature/culture divide. We can begin to think that nature is not something that exists out there maybe in the Hill Country or, no, actually not anymore, maybe Big Bend. Well, probably not. Maybe at the bottom of the ocean, someplace there is true nature. We need to get over this dichotomy.

an alternative

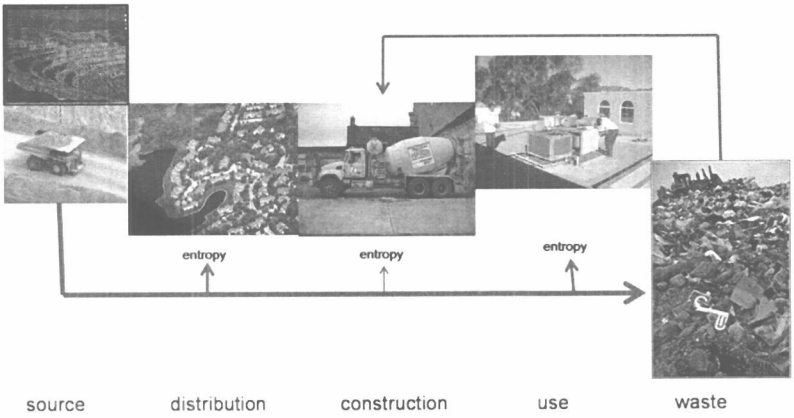


We can begin to thank places like Hornsby Bend in Austin, which processes the solid waste from human bathrooms into compost (yes, that too is a part of nature). We need to go further and just call nature culture. We can begin to think of cities not just of places where tail pipes emit all of the worst gases that degrades our environment, but we can begin to reformulate or to reframe cities as something that can be itself a functioning ecosystem.

Here's our first opportunity to do this. This is what we generally refer to as a type 2 system. It resembles the first system that you saw entirely, only the idea is that we can begin to recycle some of the waste products to make other products. This is generally what you all do when you take your recycling materials to the curb. We can use it the downgraded, the material that you throw away.

At every one of these processes, we introduce more entropy. If you remember from your sophomore year physics class, entropy is the transformation of materials into a less usable form. It means that by the time you get to the end of the process what you have is matter. The first law of thermodynamics is the good news, that matter can neither be created nor destroyed, but the second law of thermodynamics or entropy is saying that is to reduce matter from an organized and highly usable state to a disorganized, a chaotic, an unusable state. That's generally what we have done in the production of our architecture.

the linear *throughput* (or type 2) system



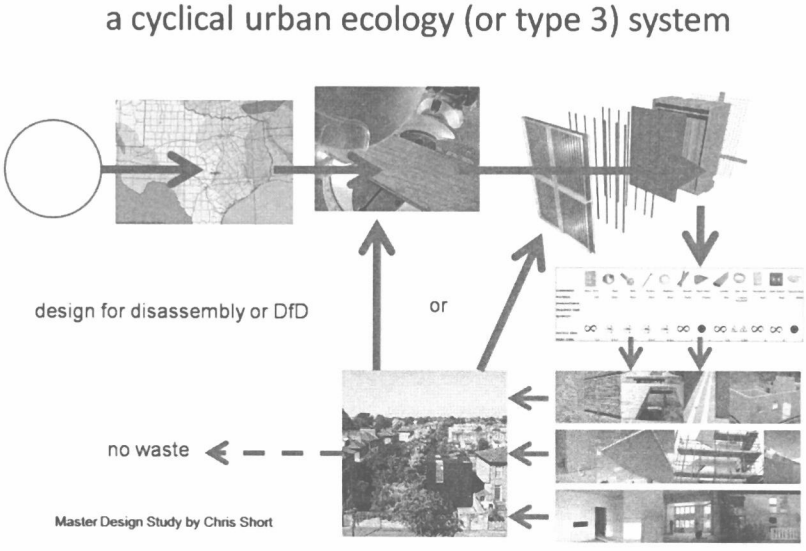
We can now recycle some of it. That's good; that's better, but we can do much better than that. Even in the projects that my students are doing now we have digital tools which can begin to estimate and predict the consequences of our design decisions.

energy, water and emission reductions in type 2 systems

50-65%

These are images from a project of my students called The Alley Flat Initiative, which interestingly is related to Steve Murdock's statistics because it's for the Latino community of east Austin. In these small, modest houses we can operate at something like 50 to 65 percent less; they consume 50 to 65 percent less energy than a typical house, not just per square foot, but per person, which is really far more important. There are other kinds of systems that are available to us.

Most important, I think, is what I'm going to describe here is a type 3 system. This is actually the work of a current student of mine, Chris Short, who will present this for his master's thesis. What Chris has been doing is to develop a system that is really local in its orientation. Let's start on the left. First we have to recognize that all systems have only one source of energy and that's the sun. If we understand the sun is the singular source of energy we can then look at how much sun shines on the place we



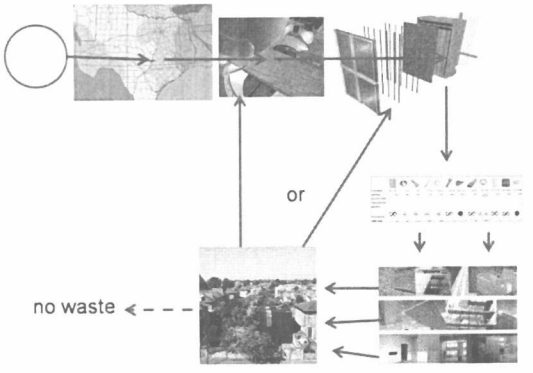
inhabit. If we look at Central Texas, the lines of divide in that slide are actually the distinct ecosystems of Texas. The second band on your right is the area of the Texas Piney Woods.

Now, what Chris has done is analysis of the available lumber that comes out of the Texas Piney Woods and to look at that as the primary source of constructing a house. If we add to that the very high-tech systems of harvesting and refining that product, of treating it locally so that it's not transported a long distance, we have zero waste if we cut that lumber with lasers rather than saws.

Third, he's begun to look at a system of designing for disassembly. The biggest problem that we have, why so much construction material goes to the dump, is that once it's put together in composite systems, you can't get it apart. You can't tear the foil from the sheetrock or you can't take the plastic from the wood. So there's nothing that you can really do with it. If you begin to design a system in which discreet layers or discreet sets and distinct materials, you can now design that system in a way that when it's reached its life span, it can be taken apart and used for something else. It requires that we begin to reframe all the ways in which we think about architectural production. Those systems there at the top are a layered wall system and then all of the system have fasteners to hold it together.

Ultimately, what's really most important about the system is if that house is sold, its useful life is given up, these materials do not go to the dump. In Chris' scheme what happens is that they either go back each piece of the discrete system goes back and becomes a part of somebody else's house—or it goes back into production. In the end there is zero waste. Every piece in the building has a bar code on it. We know where it is in space and in time. It's part of what I would call an urban ecology.

In other words, it's really a way of understand a building as a system of nutrients, just like the earth or an organic plant has a system of nutrients.



But, even if we can agree that our systems should be cyclical, rather than linear, there is plenty of room to disagree about **what** or **who** is in the system

But even if we can agree that all of our systems should be cyclical rather than linear we still have a problem. In the end it's really a political problem. The problem is who or what is part of the system. Now, we tend to describe our systems very closely and very tightly, which is why an interdisciplinary group like this one is so important. We tend to be solipsistic, meaning that we tend to only talk to people who speak our language.

as a conclusion:

3 (nested and competing) models of sustainability

economic	environmental	social

I want to end with making the distinction between three kinds of systems that we can call sustainable. Pretty much what we have been doing today is talking about the first, which is an economic system. It's about moving materials and it's about saving oil consumption. It's primarily an

economic system. There's also an environmental and finally, what I'll refer to as a social system. Let's briefly look at each of these in turn.

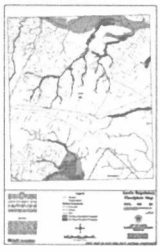
the economic model

Basis of value	**Supply-side economics--** **More efficient technology can guarantee resource sufficiency.**
Example practice	**Whole-tree forestry**

An economic system is really simply, making sure that we have enough stuff. It's what we'll call a supply-side system. In other words, if we can make our systems ever more efficient, what we will be able to do is to spread the materials over more people. That's a good thing. I think we can all agree that having resource sufficiency is good. Whole tree forestry is one of those technologies out there that does this by not wasting any of the biomass of the tree. We use 100 percent of it: bark, roots, limbs, leaves, all of it. So that's good, we need to be more efficient.

the environmental model

Basis of value	**Demand-side economics--** **We must restrict consumption.**
Example practice	**restrictive zoning**



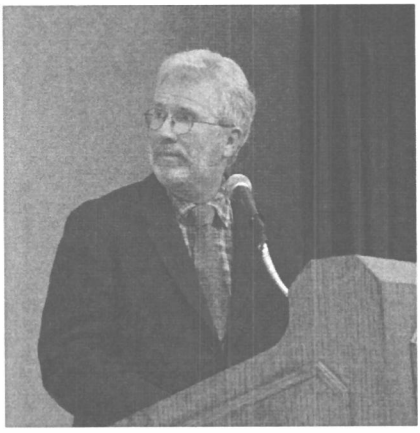
A second group comes along and says well, we still have a problem. As Steve pointed out, we're getting a whole lot more people than we used to

have. Being efficient is not going to be enough. So instead of having a supply-side strategy, we're also going to have a demand-side strategy which means that we're going to have to reduce consumption on a per capita basis. Now how are we going to do that? How are we going to reduce it? Well, we're going to have to develop things like restrictive zoning. This just happens to be a map of Austin, which shows those areas in which you cannot build because of the 100-year high water area. In other words, we're simply now saying that these are lands that can no longer be built on at all. We have to restrict consumption of some of the landscape. You can apply that to building materials, to forests, all kinds of things. So it's necessary then to restrict consumption.

the social model

Basis of value	**A minimum threshold of *having* is required to *do* anything.**
Example practice	**affordable / sustainable housing**

the Alley-Flat Initiative



Speaker Steven Moore, Director, Sustainable Design Graduate Program, University of Texas School of Architecture. Photo by member John Gullett.

There's also a third group, those who propose a social model of sustainability. But their problem is whose demand. Whose demand are we going to restrict? Perhaps yours. No. I think it should be Steve's. I think we should restrict his demand. Perhaps yours. How are we going to do this? Some would suggest it's simply the market, as things become more scarce they simply become more expensive. What about water? It makes the point, I think. There are some resources that you have to have in order to do very much at all. How as a society do we determine what that level of having is? I think that that's exactly what Steve Murdock's slides were about.

The good news is that I really don't think we have to decide today which of these

models of sustainability each of us is going to subscribe to. The good news is that there's plenty to do. I'm quite sure that we can, if we broke up into little groups today we could find ten or 12 or 15 or 5,000 projects that we could go to work on tomorrow morning. So let's do that. Thank you very much.

Discussion

AUDIENCE: To the panel who does not know me, I'm Professor Michael White from U.T. Austin. I'm an ancient historian, classics and religious studies. I want to ask a historically based question, but I think one that from my own research might have some interesting questions to pose. I want to start with two observations and then raise a couple of general questions for anyone who wants to answer.

About 12 years ago I did a series of studies on the Roman world and population change in Roman cities. To get some perspective, before the century of growth from 1650 to 1750, no city in Europe topped 50,000 people. Whereas, in the Roman Empire we project that there might have been at least 20 cities in the eastern half of the Roman Empire, that is from Italy to Syria, that were over or around 50,000 people. A large part of that is now recognized to be immigration. However, the big difference is that pre-modern period cities were death traps.

Cities did not grow generally by virtue of population turnover. Rather, they grew primarily by immigration. Cities were not able to sustain themselves in terms of excess mortality rates. Consequently the rapid turnover is something you see as a feature of the Roman Empire. That's culturally and ethnically and socially, as well. So those are some basic observations. And the implications are observable on historical and archaeological grounds. That is, you can look at these ancient cities, map the growth of buildings, architecture in particular periods of time and correlate that with population growth and other things.

In my study I found that social networks and network theory was one of the main features by which you could explain these population changes and the process of socioeconomic integration over periods of time. That's one thing I want to ask about. What kinds of ways could we use social network theory or theories like it, central place theory, a few others like that, to help us to make both historical observations but also future predictions or prognostications about it? And secondl, what are the real cultural educations at the level of pluralism and integration? And I don't mean primarily racial integration or ethnic integration, but cultural integration.

DR. MOORE: I'll tackle a little bit first. We as Americans tend to be technological determinists. We think that we're really smart and that we can solve all of our problems by inventing a better machine, a better machine to fix the problem that the last machine created. The problem is that we have forgotten to include in our technological systems an understanding

that technological choices have social and environmental consequences. So rather than try to produce new machines, new and better machines, new and better architecture—well I would say that the design problem that we have in front of us is an eco-sociotechnical system problem. In other words, we need to integrate all three of those kinds of systems in the projects that we make. That's a short answer to a long question.

DEAN TAYLOR: Well, clearly, your question provokes a lot of different responses across the many topics that you raised. I wanted to comment on the social networks, population changes and immigration by focusing on what's happened in the second half of the 20th century in the United States. And this is in comparison to comments that many of our colleagues in Europe still make that if you're born in southern Germany you're likely to spend your life in southern Germany. We've become such an incredibly mobile nation that identity, where you were born, has been replaced for so many people by where you live now. Our social networks haven't quite caught up with that particular phenomenon.

Mobility we have always seen as a wonderful thing, that ability to follow a job, follow your dream. But it has left us with a weakness in certain networks of the kind that we are used to seeing.

Now, one talks about Mumbai a little bit differently after the last couple of weeks than we did before. Mumbai is a very interesting place where two-thirds of the population of 18 million people live in substandard housing, otherwise known as the slums. Half of those could afford to live elsewhere if the economy generated the housing that they could use. However, the economy doesn't. And in general many people do not want to move out of their existing slums because of the extraordinary pattern of social networks that have developed there. Now becoming famous are slums like Dharavi or Santa City or some of the others in Mumbai. We had the opportunity to do a quick job of mapping the social networks in one of those slums where there were 40 different networks that had come back into existence around either city of origin, family, extended family relationships or shared work place and any number of things. But particularly family-driven things.

So I think, Steven, for your students and for ours they really are questions of what it means in the 21st century to belong to that community that extends beyond place. I think it's a fabulous subject that you brought up. And how a mobile society finds the kind of networks that are truly sustaining.

DR. MURDOCK: Let me just say a little bit in terms of what we know about population growth and immigration. First of all, the size of cities, if you look at them over time, certainly technology has made a tremendous difference. And that technology is in terms of basic systems of sanitation, et cetera, which have made it possible to put more people in closer space to one another. We think of Rome as a huge city but it would be a very

modest-sized city in size if you were to look at it compared to the cities of the world today.

Social networks have always played a very major role in immigration. And they've played a role in deciding where you settled, to what extent you went to City A or City B. But also tied with the American scene has been an assimilation process that over time reduced the importance of that social network relative to at least as a source of new people. The United States is somewhat unique. There are only really two or three parts of the world that have had continuous immigration. We are one of those. The U.S. and Canada and Australia/New Zealand are the only ones that have continuous patterns of net immigration over long periods of time. So it's a combination, I think, of social and cultural networks. Now, we should not forget the push element. And that is I don't leave my home unless something forces me to or because I see a better opportunity at the other end. When you talk about immigration you're talking about a very complex set of phenomenon.

AUDIENCE: I'm Wayne Holtzman from UT Austin and I think I'm directing my question mostly to Dr. Taylor. Architectural visions within the developing countries, Asia, the Middle East, are reaching out to the atmosphere, the stratosphere, are reaching out over the ocean, such as in Dubai where you have The Palms, you have The World, the reconstruction of these worlds in the ocean itself, or Malaysia, where they're reaching for the stratosphere.Now, is this a trend that has ecological implications for the rest of us? Is it a trend that's likely to grow?

DEAN TAYLOR: I choose my words carefully here because I think you've asked an extremely intriguing question, which is as we enter the 21st century and we have so much information about historical city forms, the evolution of cities, that relationship to political issues, society issues, cultural issues and even issues of war, how do we choose to build the relatively new cities? How do we respond to these enormous rates, in the case of China and India, of urbanization in cities and in the case of the Middle East in particular, which also has immigration issues.

If you take the Emirates, for example, of which Dubai is one, the typical emirate is probably between 11 to 15 percent Emirati. Let's just say five decades, in that time of country building and city building the population has become 85 percent not-Emirati, which in the United Arab Emirates means that you do not become a citizen. There is no way to be naturalized. There are always the naturals and the aliens, which is a very different basis.

Having said that, it is amazing to me that with the knowledge we have about the way cities evolve that such extraordinary wealth is being directed to build places with at best, a ten years' life. Giant super blocks, extraordinary and eye-catching forms. Especially as the next generation of development begins to happen there, there needs to be a genuine com-

mitment to the environmental impact. They have the resources to invest in something less environmentally demanding, if we look narrowly at energy. But I think you have to wonder about that particular imagery and about that form of city making. What is it going to be next? How is it going to evolve? I mean, we've got the Mall of America and they have one that's three times as big. What's next? Is bigger still better?

I think what we all have learned and what Steven was talking about, we need to better understand the future implications every time we build new. How can it be adapted? If we're running a bus now, how can that be applied to a larger transit system? As we build, how can we imagine a modification for the different household types that result from different immigration groups. I think sadly we see in Dubai and other places—early investments in Shanghai, not so much yet in India we see a desire to snag the momentary benefit without thinking about the long term.

MR. POWELL: Thank you panelists. Let's take a short break before charging ahead with this morning's program.

ARCHITECTURE AND THE ENVIRONMENT:

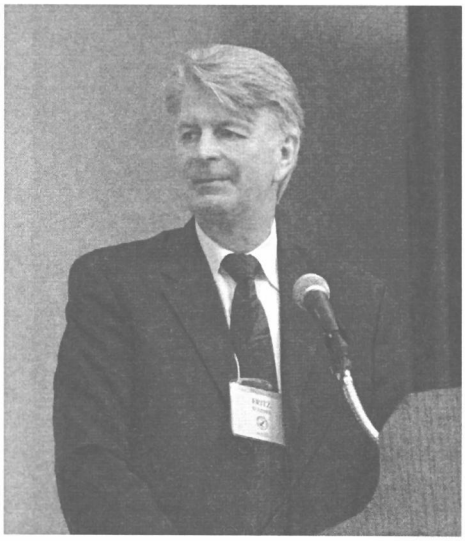
Challenge and Change II

FREDERICK R. STEINER

DR. STEINER: When we conceived the conference, we thought that it would be very, very important in the discussion of architecture to talk about the land and to talk about landscape in relation to architecture. In a way there is a kind of false dichotomy, not dissimilar to the nature/culture one that Steven Moore pointed out. We invited three very stimulating leaders in landscape architecture for this next session.

Let's step back just for a second and think about the term landscape and where the term comes from. In the original Dutch, *landschap* meant making territory. The Dutch are quite successful in making spaces and making pleasant spaces for people to live; furthermore, they make spaces that are both pleasant *and equitable*. But I think the term landscape is often misconceived as just something to look at. This is clear when you look at Latin languages. In Italian, the translation of landscape is *paesaggio*, which basically means scenery. I think that, unfortunately, to many people, landscape is scenery. There's another Italian word, *territorio* that actually has a similar meaning to the original Dutch conception.

The next three speakers will, I think, change how we view landscape and land in relation to the built environment. Our first speaker is Steve Shelton. He graduated in our first class of landscape architects from The University of Texas at Austin. He will be followed by two of the most important landscape architects in the country, Laurie Olin, principal with the Olin Partnership in Philadelphia and Mary Margaret Jones, principal with Hargreaves Associates in San Francisco. So with that, I'll turn it over to Steve Shelton.



Member and Moderator Frederick R. Steiner, Dean, University of Texas School of Architecture. Photo by member John Gullett.

Texas Landscapes: Cultural and Ecological

Steve Shelton

Mr. Shelton: Good morning. Today the topic that I'm taking on is the cultural and ecological landscape of the beautiful State of Texas. I think a good place to start is understanding our default understanding of Texas: Six Flags Over Texas. I think it really defines the default understanding. It has Texas in the middle and Spain and Mexico, the United States we'll call it the southern union—and, there are a few Native Americans sprinkled around shooting out of every bush in this place. I speak from experience because this is me here riding El Sombrero when I was a kid.

We're going to start talking about that default understanding by looking at the ecological zones and regions of Texas beginning with the Piney Woods. This is part of the pine forest that extends all the way to the Atlantic coast line. The long-leaf pine is particularly desirable and is very threatened at this time. Actually, it's not just a pine forest, it's a mixed forest composed of oak, hickory and pine.

In addition to its ecological character this is a place where the Caddo live, truly the only urban dwelling Native American Texans that existed pre-Columbian times. They weren't isolated, these folks were connected to the large super-cultures. I find it very fascinating where they're geographically situated, in between the Mississippian culture, which had its monumental spaces, the ancestral Puebloans, architectural masters, and also the Mesoamerican world. They're extremely connected to that, not only in trade but culture.

They kept their area looking like a hunting park. That was actually their form of agriculture and this area was the maintenance of a beautiful, pristine hunting park. They did so by the utilization of fire ecology, which we have largely abandoned in the modern age. They understood that having frequent and mild fires rather than catastrophic wildfires is a way to keep this—our ecology—looking good. Many of the plants require this ecological function known as serotonin.

Next door to this area is next door in Texas terms, that is is the Blackland Prairie. If we travel I-35 north and south from San Antonio, you almost entirely run through the Blackland Prairie. And there's some

picturesque thought about the European settlers. "Nature so pure that it almost is as good as if the hand of man had maintained it." In fact, it had been maintained for centuries. But hard to see that from their cultural point of view.

Only 1 percent of this is intact. Almost all of the ecological areas have a very small percentage remaining viable and intact as it was. If you look at a prairie like the Blackland it might look like a large monoculture of grass, but in fact it's extremely biodiverse. It's not just one grass, either. There are four main grasses, the big and little blue stems, the switch grass and the Indian grass. At finer grain you can see a lot of diversity. And really, that 1 percent's spread around these really small remnant prairies. I truly believe that connecting these prairies, even in small ways, could add to the viability of them.

Adjacent to that is the Post Oak Savannah, a particularly beautiful area; a very picturesque part of Texas. Seventy-five percent of it is under agricultural use today. At the southwestern edge of it you find a relic landscape. A relic landscape is a population of vegetation that is separated from a larger population; has found itself separated. Of course, in Texas those are clearly lost—lost landscapes. This picture here of Dwarf Palmetto State Park is a lost palmetto condition. Very familiar to us is also the Lost Pines of Bastrop.

There's a difference between relic and endemic. Relic is a small subset of a large population. Endemic is also segregated and isolated, but it's unique to that place. When we look at the Blackland Prairie and the Post Oak Savannah, those are examples of the process of interdigitation, which is like hands folded together. You can see it's like fingers. What happens when you have two zones operating together like that? They overlap in some places. That process or that condition is known as an eco-town and they're particularly diverse and rich. They share characteristics of the two. Contrast to that is an edge effect. Strangely enough, the Camino Real is related to this the fire ecology of the Native Americans and interdigitation.

The Spanish settled mainly in Mexico, as we know, and they operated out of their headquarters in Mexico City. That culture sat on top of some ancient cultures, Mesoamerica, Aridoamerica and Oasisamerica. They were able to benefit from those previous connections I was discussing through the Caddo. They took advantage of those corridors that had been long maintained. In fact, they co-branded those trails and called them the Camino Real. That's how they were able to very quickly stave off the French when they found them on the east border of Texas.

I always found this fascinating. If you look at where the Spanish chose to develop their cities by scratch, this city right here that we're in is the premium example of that. Take a look at San Antonio—the Camino Real and then the ecological regions and the rivers. They really chose the most diverse ecotonal landscape available to them in the presence of a reliable river, the San Antonio River. I find that to be a really interesting analysis

there. What they did was create a small European town, which is fascinating, isn't it?

Now, you see here the acequia in San Antonio and a weir across the San Antonio River. The Spanish used this to exact the value of the land. By the way, they didn't know much about exacting value from the landscape. They learned all this from a significant Arabic foundation. See, the Arabs settled in southern Spain for over 700 years and had developed extreme competence at deriving value out of the landscape. They were the original conquerors that set the template for how the Spanish would attack the American landscape.

It was a big year, 1492. Not only did they discover the New World, the Spanish also accomplished the re-conquest of the Iberian Peninsula. What that basically told the Spanish is that they had been selected to re-establish the Holy Roman Empire. They really felt that was their prerogative. I find this fort in Puerto Rico to be a really strong example, El Moro, of this Roman influence.

Now, the Edwards Plateau, the Spanish took advantage of this geology. There's a ancient mountain range called the Quachita range, which I find fascinating, because it is now buried deep beneath Texas. It came about from this pangea condition that we had. And, of course, the limestone shelf, the Balcones Escarpment sitting on top of that which sets up our wonderful karst condition in the Edwards Plateau where we have these beautiful caves and water resources that not only the Spanish enjoyed, but we enjoy, as well.

We have to be very careful with this as we look at sustainability. This is a map of the Edwards Aquifer. It's quite a rechargeable and dynamic system. We need to be careful developing around this as it is a very vulnerable and precious resource for us.

Edwards Plateau is a particularly picturesque landscape. My old buddy, Frederick Law Olmsted, he liked this area. He traveled through here in the mid-1800s and called it quite the natural specimen. One section of the Llano Escarpment or the Llano Uplift is particularly picturesque and beautiful, adding to the geological diversity of this area. It really sets up some amazing vistas and views, doesn't it? Yes, I love looking through the Hill Country. It's quite a nice view. This brings us into this question of what's authentic because this is really authentic to Texans.

We have to ask ourselves about the continuity of the landscape, too. We have to ask ourselves is this irrigation sustainable for the Edwards Plateau? I always ask myself what my old buddy, Frederick Law Olmsted, would think about this. You know, would he like it? I know he'd hate it now. There are a few things that are native to this area that have run amok. One of those things is the ash juniper. This is an endemic plant or not endemic, let me use the right term—kind of a native plant that's gone wild. That's because we control the wildfire and we don't have bison trampling it down. Our old buddy, the golden-cheeked warbler sure does like it. He depends upon it for his survival.

The Edwards is full of relic landscapes. The bald cypress coming up the river valleys with long fingers. That's relicked from its wider population. We've another lost landscape, the lost maples in western Edwards Plateau. The mescal bean of the Texas mountain laurels and other species that's from here. I particularly love this Anacacho orchid tree from the Edwards Plateau out west, only from the Anacacho Mountains here in Texas.

We're going to take on the Trans-Pecos. You see these beautiful shelf structures? I love the fact that this corridor of the Pecos River is really occupied by human beings. If you walk along there, you'll find these kinds of etchings and drawings. This is really more than pictures, this is a library of their cultural knowledge. If we knew how to understand it, it would inform us how to survive in this place. It was a human corridor where people transmitted themselves north and south and to Mesoamerica and beyond. They didn't build cities in particular and I can see why. The architecture is provided by nature. No reason to build in this area.

If we travel north of the Pecos we come to something built by people, a citadel known as Pecos Pueblo. It's the gateway to the Pueblo world. I particularly love Taos Pueblo, which is on the Rio Grande so I claim it for Texas. Taos is a beautiful convergence of human occupation and nature. You'll find that the massing and structure of these pueblos mimics take on characteristics of the natural environment. The beautiful, sacred Blue Lake transmits its water through the Red Willow Creek that goes dissecting right through the community from the divine through the community back into the divine and on to Texas. This is memetic architecture.

Now, of course, the Trans-Pecos is really just a part of the Chihuahuan Desert. We ask ourselves ifthis desolation? My grandfather asked that, in fact. He had a friend that went through New Mexico and remarked upon their tag line, the Land of Enchantment. He said, "The Land of Enchantment, hell, that's the Land of Starvation." It is actually a very diverse place in contrast to what he thought; one of three of the most diverse desert ecosystems in the world. There are 3,500 species that occupy the Chihuahuan and a whopping 1,000 of those are endemic, unique to the Chihuahuan Desert, almost one-third of the plants you see are endemic.

Of course, the old pronghorn. I have to throw him in there. This is the fastest land animal in North America. Sea monsters used to live in this area in a shallow cretaceous sea. As time went by, of course, the sea withdrew from the land. As the sea withdraws you get a landscape in transition, such as swamps. Prairies coming up. I find it fascinating that 18,000 years ago this sea was significantly further offshore than today.

Of course, a landscape in transition in the Trans-Pecos underwent desertification. I think that led to a lot of the biodiversity. My favorites are these desert hibiscus. Of course, hibiscus are generally swamp plants. But these fully adapted to desert living.

The Trans-Pecos could be described as desert seas and sky islands. And it operates much like an ocean condition with the islands. I would say it really sets up quite the island paradise. Of course, instead of coconut trees,

we've got beautiful Mexican pines and bigtooth maples and madrones. There's water in the desert, believe it or not, in significant amounts. A wetland in the Chihuahuan Desert or any southwestern desert is called a cienega. Perhaps many of you have seen pictures of the beautiful cienega at Balmorhea. That's a lot of water.

There's also some swamps on the gulf prairie and in the marshes along the coast. The big player here is not the desert, but the Gulf of Mexico. Wetlands in this area are called resacas. They're beautiful conditions that lead to the diversity in this area. You've also got the transient, dynamic coastline that has a very fragile and beautiful coastal dune ecosystem. I wonder how long that's going to last.

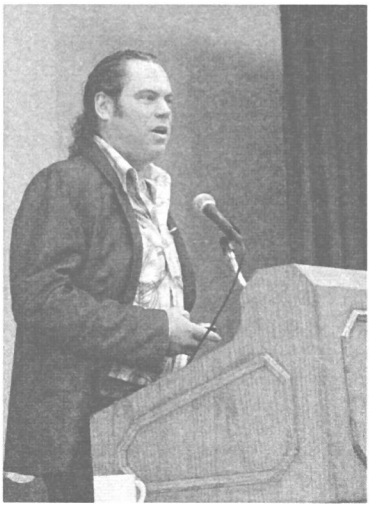
We also have the Rio Grande, which used to be known as the Rio De Las Palmas by the Spaniards. The bottom 80 miles used to be covered with these beautiful Mexican palm trees.

There's only one little sanctuary left and then there the resaca lake at the foot. This area's undergone a significant amount of agricultural conversion which leads to a lot of fragmentation. In addition to this fragmentation, this changed the nature of the prairies out there as woody encroachment. I don't know who this guy Woody is but he's making a lot of trouble down there.

Actually, this area's just got a rowdy neighbor. It's known as the South Texas Brush Country. It's got a lot of plants growing there, but they're plants that stick, sting and stink. That's how they're described. This is really just a dense, tangled buffer here. It's ideal for wildlife to sustain itself. Not so good for the Mexican army, though. They did get through this area on their way to San Antonio to do their bidding. But really, they weren't relying on the South Texas brushland to keep the Anglos out. They employed a plan of cultural buffering. They, as we know, brought in many cultures from Europe and set them up in the way of the Anglos. They also preferred to have Europeans that were Roman Catholic. That was an additional cultural barrier that they utilized.

Cross Timbers is up north and it's a beautiful transitional woodland. I find it fascinating that this is the transition that goes all the way to the Great Lakes. This is the transition from the woodland to the east and grass lands to the west. Here we go, the rolling plains. This is called the Big Country, also called West Texas. It is 444 miles from Abilene to El Paso, so is it really West Texas? To me, this is the land of small towns. You can see along the horizon every 20 miles there's another water tower. I also find that the county courthouse has a particular prominence in this area. They really stand out like nowhere else to me. That's just my opinion. And this sets up the small-town feel, you know, the thing that we don't really have in our current approach to subdivisions. I find it interesting that 85 percent of Texas is classified as rural country yet only 5 percent of the population comes from such a place. I'm from this area and a small town. I didn't know I was so unique.

Oh, yes, don't forget about the cotton, seas of cotton. The old cotton—



Speaker Steve Shelton, Chief Executive, Landscape and Garden, Inc., Austin. Photo by member John Gullett.

these hulking machines that we see on the horizon. Thankfully, we don't have any more hulking machines on the horizon out there. Well, there's wind turbines. I don't know why they didn't come up.

We're going to move on to the High Plains. You can see this sharp contrast between the High Plains to the left and the rolling plains to the right. It's called the Llano Estacado. The cap rock there is a example of an edge effect—very strong. You can see the instantaneous transition from one to the next. Awesome.

Now, I want everyone to question their default understanding of the Texas landscape. Thank you very much.

Land and Beauty

Laurie D. Olin

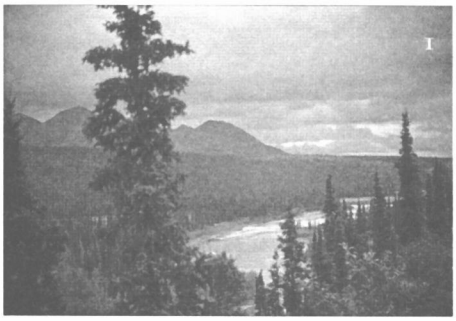
"Beauty has no obvious use: nor is there any clear cultural necessity for it. Yet civilization could not do without it." Sigmund Freud

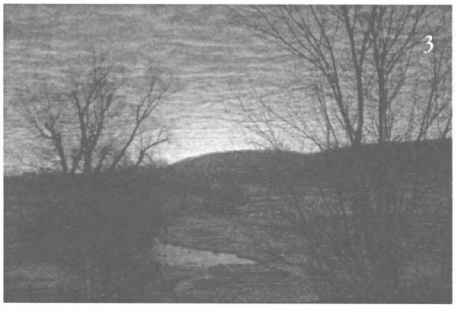
Mr. Olin: The first Europeans who arrived in America were obsessed with land and God. Both the Spanish conquistadors and the Puritan settlers landed in hopes of seeking a new fortune and a setting for their life and ideology. Both saw the land as an opportunity for gain and exploitation. (ill. 1) From accounts of their early experience it doesn't seem that they found the land 'beautiful', but in fact difficult, daunting, and in what we think of as a *natural* state, despite the fact that large portions had been manipulated by the people that had lived here for tens of thousands of years. The new arrivals had come from a landscape that had been cleared and cultivated, divided and settled heavily for thousands of years, and the jungles, deserts, prairies, and forests of North America seemed as savage as they felt the inhabitants to be.

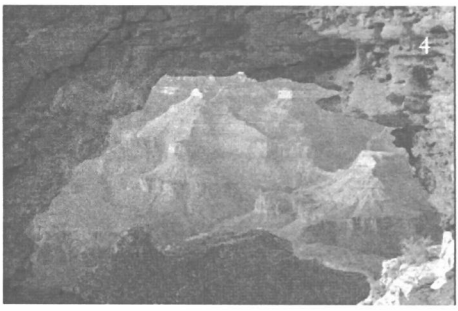
When I was a child growing up in Alaska in what must surely be one of the most Sublime landscapes in the world by any measure we had a neighbor who had a subscription to a magazine called Arizona Highways, which consisted of multi-page photo essays of the desert southwest, an inordinate number of which were taken at sunset. (ill.2) The texts were minimal, really just expanded captions describing where the pictures were taken along with tid-bits of history. While not totally oblivious to the spectacular sight of the Alaska Range and its peaks spread across the horizon south of us across the Tanana valley we pored over pictures that I associate with calendar art today with a fascination only partly accounted for by the ice fog and sub-zero temperature outside. (ill.3) Just as one hears the oohs and ahhs rise from a crowd during a fireworks display, nearly everyone has stood and stared at particularly striking sunsets, especially when presented with a vast expanse of sky and territory such as the desert, prairie, or ocean.

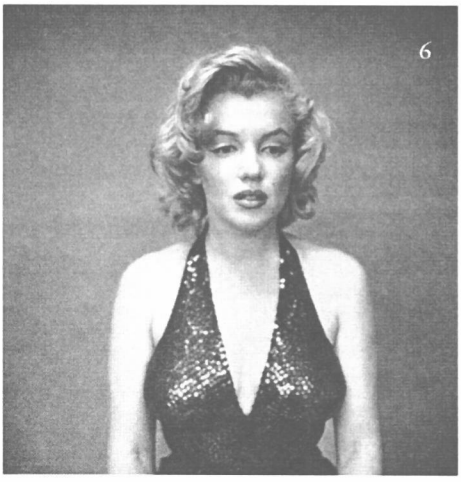
This week, out of curiosity I went on line to see if the magazine still existed and there it was, (ill.4) still going strong and still full of gorgeous photos of the land. The web site offers subscriptions, shopping, and portfolios of pictures of the Grand Canyon and Sedona in the snow, of Saguaros in the fog, of golden light on various mountains and buttes, and, of course, sunsets over vast panoramic horizons.

By the 19th century a considerable amount of American painting was devoted to such scenery and visual effects. (ill.5) And still today recent









and accomplished paintings and photographs of landscape that strive to portray imagery that many people feel is beautiful can be seen in museums throughout the west. What is behind this seemingly inexhaustible fascination and depiction of land? One answer is *Beauty* or our idea of it as exemplified by particular places, moods, or aspects of the world about us; and one central characteristic of Beauty is the provision of pleasure.

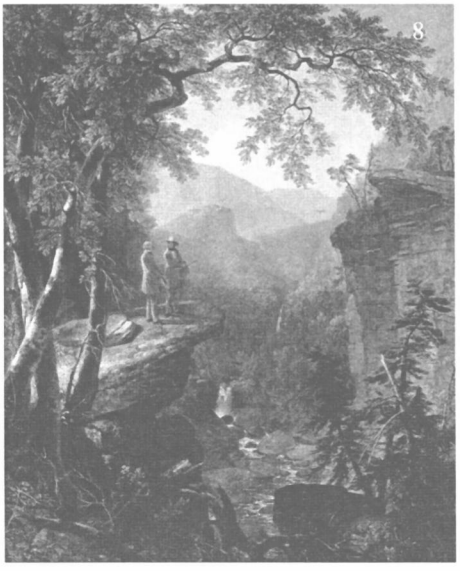
A designer like myself feels a certain amount of difficulty discussing Beauty partly because of the numerous theories and pronouncements centered on concepts of morality and relativism regarding values and perception that have been ladled over the topic. As a working member of in the Arts I believe that the subject (or phenomenon) *Beauty* exists, but until

recent years I have been shy about talking about it. Great debate has been generated through the centuries concerning whether Beauty is objective or subjective, whether it is inherent in things or is simply a perception or feeling in our minds, and whether it is related to desire and arousal, whether sexual or some other emotion. This has troubled a series of writers because of its apparent ambivalence regarding social and moral issues of all sorts. (ill. 6) One need only think Marilyn Monroe, or the extraordinary weapons—swords and firearms—one finds in great museum collections, or architecture produced by some of the most dangerous and murderous rulers of church and state in Renaissance Italy or ancient China to see why beautiful things have been seen as outside the boundaries of moral considerations. The question of where beauty is located, includes another old debate about universality versus culturally determined perception and values.

For western philosophers prior to the 20th century, *Nature* writ large and beyond us—whether of the *Arizona Highways* variety or stormy alpine scenes—*Nature* as vast, terrible, unknowable, wild and truly inhuman by definition, this was the *Sublime* not the *Beautiful*. (ill.7) For them Beauty had to do with human scale, such as one sees in paintings of the 17th century that characterize an emerging sensitivity to landscape as a subject for art in the West (as opposed to History or Portraits), works that depicted a portion of the world inhabited for several thousand years. Beauty to some degree in terms of landscape was a matter of domestication and relationships of natural elements to human or social issues.

Beauty and the Sublime especially as related to nature, landscape, and art have been major concerns of western thought for centuries. Longinus wrote *On the Sublime* in the first century; in 1756 Edmund Burke published his *Philosophical Enquiry into the Origin of our Ideas on the Sublime and Beautiful*; Kant's *Observations on the Feeling of the Beautiful and Sublime* followed soon after in 1763, Hegel's remarks about nature and beauty in *On Art, Religion, Philosophy: Introductory Lectures in the Realm of Absolute Spirit* delivered in Berlin between 1818 and 1831, between 1836 and 1847 both Emerson and Thoreau assayed the topic in their quintessentially American way. (ill.8) Despite a bevy of 20th century European (and a handful of American) thinkers dismissing this entire skein of thought as outdated and hopeless, recently some of our own contemporaries such as Stanley Cavell and Jeremy Gilbert-Rolfe have written thoughtfully and persuasively about these dropped threads regarding our need for and methods of consideration of these twin topics: Beauty and the Sublime.

One of the main debating points has been whether those things people find 'beautiful' are subjective or objective—whether the phenomena reside within the beholder or within the thing beheld. Notions that any feeling or perception could be universal or characteristic of all humans versus a belief that they must inevitably be culturally determined have contested violently through journals and institutions, a paragon of sorts between



nature and nurture. There is evidence on both sides in the debate between universality and culture.

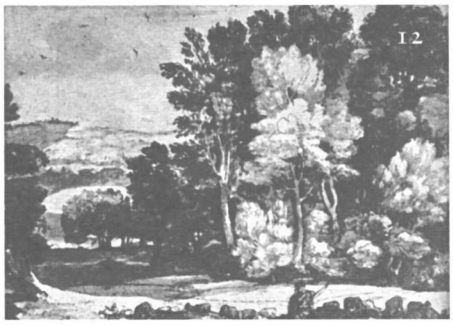
Among my favorite paintings are those of China from the Northern Sung Dynasty, especially the great hand scrolls of the 10th and 11th centuries. (ill. 9) In them one finds a dark and cold landscape of mountain peaks and forests, snowstorms, and deep valleys. Waters pour out and flow down, not only to the sea, but also deep beneath the earth. The masses of granite groan, and people, small and nearly insignificant, plod along on steep paths toward their goal, whether a small hut or summer palace. The Southern Sung and Yuan ink paintings that followed while less somber share a vision of humans in nature as no more than other creatures, whether of the deep or leaves on the trees, like clouds passing across the moon. (ill.10) We are part of it all, but only a piece, an ephemeral one at that. And yet it is inspiring. To me, and many others, it is beautiful: this grand sweep of nature, this landscape, and these paintings.

John Muir the man most responsible for saving Yosemite from development and a spiritual father of our national park system wrote "Bathed in such beauty, watching the expressions varying on the faces of the mountains, watching the stars, which here have a glory the lowlander never dreams of, watching the circling seasons, listening to the sounds of the waters and winds and birds, would be endless pleasure." (ill. 11)

Of all the aspects of Beauty that contribute to our sense of it, one of the most important is that of Form. The contemporary photographer Robert Adams has written "Beauty is, in my view, a synonym for the coherence and structure underlying life...Beauty is the overriding demonstration of pattern that one observes, for example in the plays of Sophocles and Shakespeare, the fiction of Joyce, the films of Ozu, the paintings of Cezanne, and Matisse and Hopper, and the photographs of Timothy O'Sullivan, Alfred Stieglitz, Edward Weston, and Dorothy Lange. . . . Why is Form so Beautiful? Because, I think, it helps us meet our worst fear, the suspicion that life may be chaos and therefore our suffering may be without meaning."

Centuries later and half way around the globe from the Sung poets and painters various individuals went out into the landscape of Europe to draw and paint, creating a movement that is still playing out like a great wave. (ill. 12) The world they painted, however, was largely one of human endeavor and agriculture. While aspects of it were still wild, its roots were in the literature of Rome and Greece and attitudes regarding land that had to do with order, predictability, and agriculture. These were paintings that showed a land largely cleared of its original forests, occupied by herdsmen and their animals—sheep, goats, cattle—that produced a situation of mature trees standing amid heavily grazed meadows and pasture. The landscape of the Georgics and Eclogues, this pastoral vision of a deeply pleasing countryside created for a highly urban audience later came to form the underlying trope first of Italian Renaissance vignas, later of 18th century English landscape gardens, and more recently many of our own most beloved parks and suburban landscapes.

In *De natura deorum* Cicero, writing in the 1st century, used a phrase that translates as "second nature" to describe agriculture and the world that humans had fashioned from the elements of the first, original natural world. (ill. 12) That the results of such agency could be pleasing is reflected in the construction of rural retreats and villas on agricultural estates and an outpouring of pastoral verse and paintings from classical antiquity through the renaissance. Agricultural lands engender Beauty largely due to the fact that one of their characteristics is the creation of pattern and order, of shaping the land into clear and strong forms, and the purposeful arrangement of plants at several scales. (ill. 13) The beloved parks and landscape gardens of the 18th century in England were to a large extent created as representations of earlier—especially Mediterranean—pastoral landscapes. Created at a moment when the industrial revolution was dramatically changing society, city and countryside, these creations were neither natural nor particularly utilitarian as agriculture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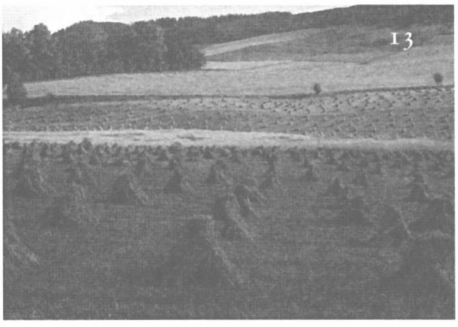
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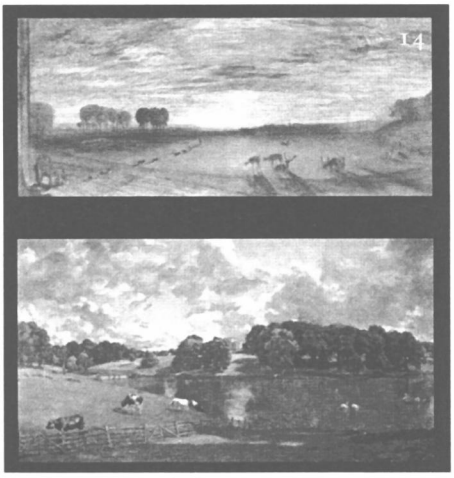
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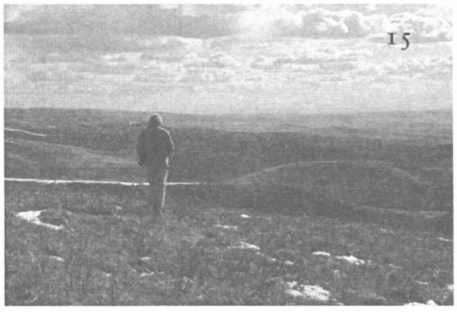
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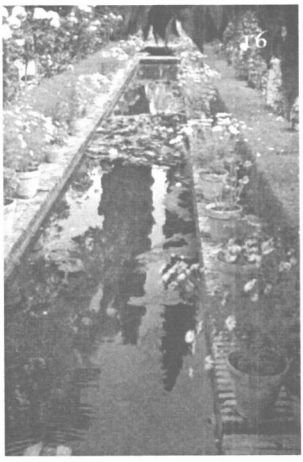
was also in the throes of industrialization. The landscape of estates such as Stourhead and Petworth were yet a 'third nature' to borrow the a phrase of 16th century humanists Jacopo Bonfadio and Bartolomeo Taegio that consciously developed Cicero's notion of artifice derived from environmental material and opportunity. (ill.14) Despite the fact that agriculture and life on the land can be hard and at times crushing (one thinks of Crabbe, Hardy, Rolvaag, Cather, Steinbeck and others), there is a vast repertoire of visual images depicting the land itself, its contours, of light falling across hills and fields, crops gleaming in the sun, of barns and cattle, the whole apparatus, whether it is the Samara plain in Crete, the Tay Valley in Scotland, central and southern Pennsylvania, the rolling wheat fields near Walla Walla, or terraced rice paddies in Asia, the general consensus over time has been that agricultural lands are beautiful. (ill.15) Consider for example the attitude recorded in many of the paintings of Breughel, Rubens, Claude, Constable, and Grant Wood.

Which brings us to gardens and the designed landscape, the *terza natura* of the humanists. Gardens frequently partake of and espouse an ambition to possess Beauty. (ill. 16) If the Grand Tetons, Yosemite, or the Li River in Guilin transcend traditional definitions of the beautiful, and in their stunning physical presence are visually arresting, even overwhelm-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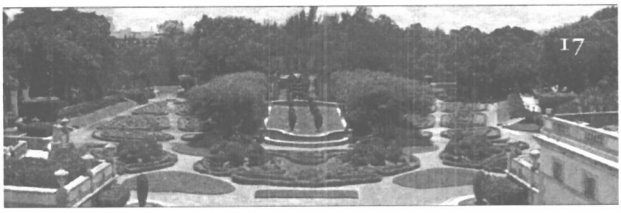
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ing, and are superb examples of what Kant, Schiller and Burke categorized as Sublime, not the Beautiful, just what then are some of the aspects of nature that people have attempted to embody in the design of parks and gardens?

The first obvious answer is the creation of a space that is not part of everyday domestic life or our working world. (ill. 17) Like Beauty, gardens are not particularly necessary for survival, they have come to exist for their own sake, and are in many ways what Michel Foucault describes as Heterotopias—places that are out of bounds—that bring together and summon up experiences for pleasure, that gather together plants and spaces, visions and references to places, things and ideas beyond the garden, whether in time, location or imagination, that are of the world, but separate from it. Gardens and parks have been developed as particular portions of land in which to lose oneself in something other, a place to step outside ourselves and our daily issues, places that bring together or recreate properties such as those found in nature, especially those that we find to be beautiful, that stimulate our senses and emotions: color, texture, pattern, seasonal change, diverse and harmonious forms, spatial variety and extension, the magic of light and water, of sound and smell, in short a representation or microcosm of that which we find beautiful. That there are little or no rules or formulas to achieve this is demonstrated by the enormous variety of Beauty that has been created. (ill. 18)

Robert Adams has remarked:

> "the only thing that is new in art is the example; the message is broadly speaking, the same—coherence, form, meaning...we


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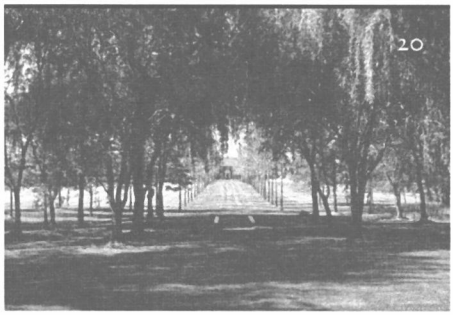
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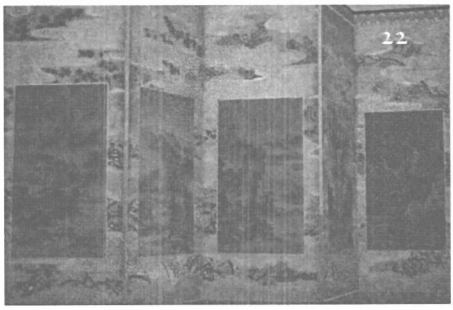
respond best to affirmations that are achieved within the details of life today, specifics that we can, to our surprise and delight and satisfaction, recognize as our own."

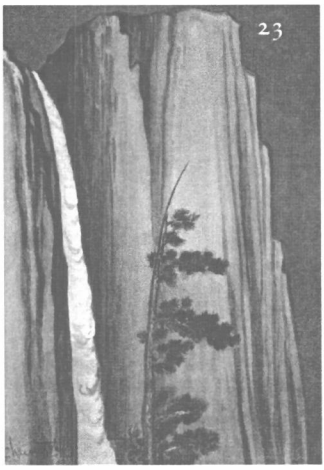
For a time it has been fashionable in Academia (as well as in certain religious sects) to attribute many of the ills of our day to the Enlightenment. While I think this is ridiculous, it is true that there has been a move toward privileging intellect and quantification over feeling and intuition, as we understand them. (ill. 19) Hegel famously argued (and many today still question) that the Beauty of human endeavor was superior to the Beauty we experience in nature:

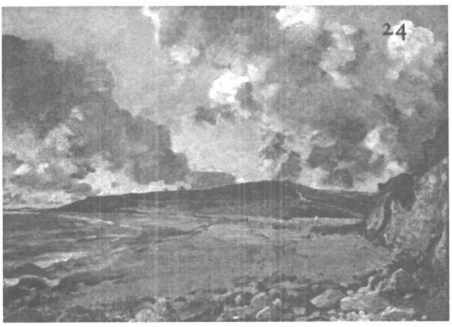
"in common life we are in the habit of speaking of beautiful colour, a beautiful sky, a beautiful river, and moreover, of beautiful flowers, beautiful animals, and above all, of beautiful human beings...

...natural beauty ought to be recognized as existing beside artistic beauty. (ill. 20) We may, however, begin at once asserting that artistic beauty stands higher that nature. For the beauty of art is the beauty that is born—born again—that is—of the mind; and by as much as the mind and its products are higher than nature and its appearances, by so much as the beauty of art higher than the beauty of nature."

I am well aware that many of my peers in academia, the art world, and professional practice are uncomfortable with the phenomenon of Beauty, preferring to engage in work that is political, historical, technical, ecological, rhetorical, sexual or something else, anything else but definitely not 'merely' beautiful. (ill. 21) to them it smacks too much of commerce—whether consumerism, products, advertising, sales, or the business of art, the galleries and the exploitation of pleasure and desire to sell everything from clothing and cosmetics to cars and real estate. Many artists and designers who actually make things remain interested in beauty and its terrible demands, its promise of rare moments of fulfillment, which in the case of some art, design, and landscape seem to continue to occur.







So why did the creation of great gardens and the representation of landscape become a subject for painting, contemplation, and pleasure in such diverse parts of the world and periods of history—in each case accompanying periods of poetry and philosophy that discuss the phenomenon such as Sung and Yuan dynasty China, 17th, 18th, and 19th century Europe, and 19th and early 20th century America? (ill. 22) I would speculate that in each case one finds a society in upheaval, urbanizing and industrializing (to varying degrees) and faced with the loss of traditional agrarian ties, as well as a growing leisured elite who can consider the landscape as an aesthetic stimulus to thoughts regarding man's fate. (ill. 23) Whether it be fading sunlight on the granite peaks of the Sierra, the wind through the snow covered branches of pines north of Xian, the advancing shadows from live oaks across the Roman Campagna, or the animate sleeping forms of eroded mesas near Abiqiu, the color of hardwoods in New England, water spilling over a ledge in the wilderness, or a vast panorama opening out before us, whether unexplored or tamed by human endeavor, our predecessors have been driven to record their encounters and feelings regarding land. Yet, to what purpose? What is it that we have cared so much about in either the representation or original scene that prompted the effort to record it, to express a particular aspect, vision or supposed meaning, or to try to build aspects of it for ourselves?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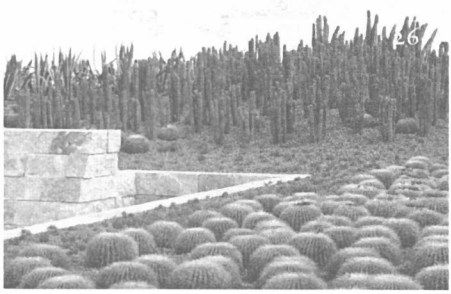
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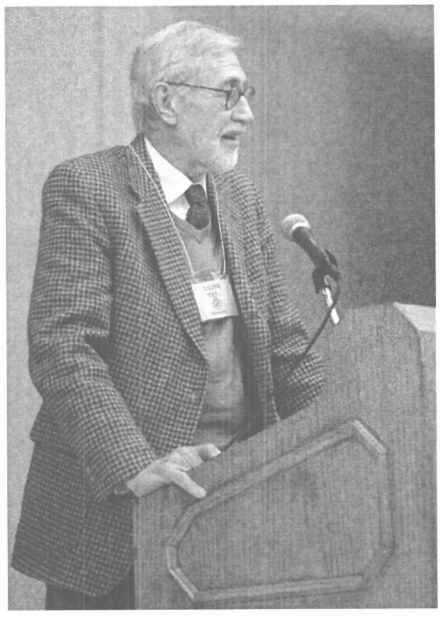
I would speculate that as animals we have a sense of our being of the world, that part of our being alive is to sense the living nature of our environment, our kinship, relationship, and destiny to share it for a time with energy and perception. (ill. 24) As creatures of society we also are invested with ideas and concepts, values and habits, memory and history, regarding the world, our struggles, and endeavors regarding the land, its wilder and grand aspects as well as our own transformation—both banal and magnificent—of portions of land and landscape. Landscapes whether natural or contrived normally exceed our ability to absorb or understand them in one glance. They contain a surfeit of detail, extending beyond our ability to count or measure, to comprehend completely without spending time looking or physically exploring them. They stimulate our senses: the movement of leaves and clouds, the sparkling, shifting and shimmering of light on the surface of water, the shadows and light playing upon the ground nearby or distant hills, the infinite variation in depth of field for our eyes to shift their focus upon, the colors, textures, forms of plants and topography, the heft and weight of the bones of the earth, the smell and color of the earth, wind moving through trees or in tall grass, the distant glint of light on a peak or bend in a river, birds scudding overhead, animals in the distance, a train or traffic crawling up an incline, a patch of yellow aspen leaves amid the dark spruce. The list, like the world is nearly infinite.

If one definition of beauty is a surplus of gratuitous stimulus and pleasure, it is easy to see the relationship between land and beauty. (ill. 25) Another aspect of Beauty is our inability to possess and hold it, its fugitive and ephemeral nature that engenders a sharp sense of the moment, and frequently, thereby, one of incipient loss. So much of what has been painted records nostalgia for disappearing places and scenes that were once ubiquitous or momentary. If another possible attribute of Beauty is its eternal and timeless nature, one understands the recurrent and atavistic themes of people wandering and reposing in nature and landscapes, of an emphasis upon mountains and water, ancient trees and agricultural scenes.

Whether as a result of knowing these things, or from an irrepressible optimism and sense of hope—which seem to be common traits of designers and many artists—I don't limit my consideration of Beauty to museum visits and vacations, but also seek through what I do for a living, to foster the opportunity for Beauty to come once more into being. (ill. 26) To do so, however, isn't as easy as it might seem. It's close to impossible to set out to force Beauty to occur.

In a recent conversation with the poet Michael Palmer this came up. In answer to one of his questions I said, "...Do we ever try to put beauty into things? Yes, but in a way it's a by-product of other activities." He said, "It's the unstated goal. It almost has to be unspoken." To which I replied, "If you go straight at it, you miss every time." And Michael concluded, "You end up with pretty instead of beautiful, without the depth because the primary consideration can't be surface in terms of beauty. Pretty is about surface."



Speaker Laurie Olin, University of Pennsylvania, Professor of Landscape Architecture and Regional Planning. Photo by member John Gullett.

The implication, of course, is that Beauty is serious, it is deep, and that it has great value for sentient humans. (ill. 27) While there are many manifestations, one of the most accessible has been and remains to be found in land whether natural or designed. A loss or diminution in our interest or comprehension of Beauty regarding Land or Landscape would indeed be a great loss.

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1. Talkeetna River near Denali, Alaska; John M. Olin, 1959
2. Aspens, Grand Canyon National Park; David Meunsch
3. Sunset, Steiger Farm, Blue Spring Run, Mercersburg, Pennsylvania; Laurie Olin, c. 1990

4. Grand Canyon National Park; David Meunsch
5. Kaaterskill Falls, New York; Thomas Cole, 1826
6. Marilyn Monroe; Richard Avedon
7. Rural landscape; Meindart Hobbema
8. Kindred Spirits (Thomas Cole and William Cullen Bryant in the Catskills); Asher Durand, 1849
9. Summer Mountains, northern Sung handscroll; Chu Ting, c. 1050
10. Southern Sung Album painting; Yen Tz'u-Yu
11. Yosemite Valley (from Tunnel-view overlook); Ansel Adams
12. Vigna of Villa Madama, Rome; Claude Lorraine c. 1640
13. Stooks in fields, Tay River Valley near Killiekrankie Pass, Scotland; Laurie Olin, 1970
14. Petworth Park sunset; J. M. W. Turner and Wivenoe Park; John Constable
15. Wheat fields near Walla Walla, Washington: Laurie Olin, 1971
16. Genralife Garden, Ganada, Spain; Laurie Olin, 1982
17. Vizcaya Garden, Coral Gables, Miami, Florida; Laurie Olin, 2003
18. Silver Sea and Cone, Sand Garden, Ginkaku-Ji (Silver Pavilion),Kyoto, Japan, Laurie Olin, 1983
19. Mountain laurel in bloom. Tuscarora Mountains, Pennsylvania; Laurie Olin, 1995
20. Allee between Rotunda and Abigail House, New Albany, Ohio; Laurie Olin, 1995
21. Pergola and vines by Gertrude Jeckyll, Hestercombe, Somerset England; Laurie Olin, 1998
22. Four Seasons four fold Screen, Kano School, Japan, c.1630; Freer Gallery
23. Yosemite Falls, Yosemite; Chira Obata, 1930
24. Beach near Brighton, England: John Constable
25. Mountain near Abiqiu, New Mexico: Georgia O'keefe,
26. Cactus GArden, Getty Center, Los Angeles: Olin, c. 2000
27. "Clear Dawn", from 36 Views of Mount Fuji; Hokusai, 1830–32

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Inspiration and Execution

Mary Margaret Jones

Ms. Jones: I'm very happy to be here, back. It's always nice to come home to Texas. Our bios are in your packets, but I think it's important to fill in a few of the more critical details of my bio that aren't in there. I grew up in Baytown, Texas, a block from Burnet Bay. I went to Lamar Elementary and I went to school at both the University of Texas and Texas A&M University. So I cover all the bases.

I'm going to talk about three projects; I'm going to skip all the way to execution. That's what I was asked to talk about, was inspiration and execution. So I'm going to show you three projects, two built, one underway. These are projects that are about transformation. They're about the kinds of changes we've talked about all morning needing to happen to reverse the trends of sprawl, to reverse the trends of environmental degradation, to reverse the trends of environmental injustice and to begin making places that are more urbane, that have that density that Marilyn talked about and that have that beauty that Laurie just talked about.

I'll start with this one, which is in Chattanooga, which is probably one of those cities that will be absorbing so much of that growth in the future; one of those sort of mid-size, largish cities. Chattanooga is on a river and this is a project about transformation of a city and restoration of a river. It's a river that floods, so this is a levee situation. This is about bringing people back to the river in a city that has turned its back on the river. This is about giving people access to that water while at the same time controlling the floods. It's also about taking on a site that was highly toxic and making it into a place for recreation and for nature.

We're dealing with both sides of the river in Chattanooga. This is the city side and this is the side of a former GE plant where they had made refrigerators and other such things. The land was in many ways completely poisoned on that side.

This is the built city side of the project. It's not just about making open space. The mayor wanted us to be sure we weren't just making open space but that we were being a catalyst for development which Chattanooga needed; they needed mixed-use development. They also needed housing on the river and wanted to expand their aquarium. So we needed to make open space as a catalyst for economic change on this city side of the river.

Basically, we sculpted the river's edge, sculpted the levee such that a

person could now get to the water and celebrate the water and once again recreate on the water. This is also a very important site historically. This is Ross's Landing where 39 tribes were forced to embark on the Trail of Tears and walk across our nation to Oklahoma City. The fountain that you see in the heart of this project, where the city comes to the water, it is representative of that Trail of Tears and representative of the tribes who embarked from this location. On either side of that fountain you have access, terraces, steps, an amphitheater-like setting to the water's edge.

This photograph was just after the project was complete. They're setting up for opening day and tons of people came and have continued to come. We collaborated with various Native American tribes who helped us with this particular place of passage. This is the place of passage through their ancestors would have moved through to embark from the landing. They came up with these inscriptions, these medallions that marked this passage. Kids love to be under here in the shade and at the water's edge. The fountain—these tears—are also the destination from the upland park that connects the city to this spot on the river.

It's a very sculptural place. We have to hold floodwaters back from the city, so we can't neglect the fact that it's a levee, but we can certainly tilt the planes of that levee in a sort of three-dimensional louvering so that you embrace the water's edge, you are able to access it and not just block yourself off from it.

These interstitial places become places for people to gather. Chattanooga was historically the location of the Head of the Hooch, which is a rowing regatta, a rowing event. It is now happening again because of this 21st Century Waterfront Park. It's also a place where many kayakers enjoy weekends.

None of this happened before turning back to the water and creating this very simple reconnecting of a city to its river. It took an aggressive mayor. Two of my projects today are about fabulous mayors. We did a study and told the Mayor that we would have to break this down into phases and it would be about an $80 million project. He said, "No phases, we're going to build it all and we're going to do a hotel tax to pay for it." And he did. We worked with some really talented people, Jamie Carpenter, for instance, who's a beautiful designer of lighting elements, glass elements, architecture elements.

Now, across the river, on the wrong side of the river if you will, was GE's former site for making refrigerators. Not all of the site was degraded by this post-industrial use. This part of the site had a beautiful stream on it and various woodlands reaching to the water's edge. But as you can see from this diagram, the heart or the base point was 475 acres of watershed. All this water was flowing into this toxic area through this woodlands into the river and groundwater very, very close to the surface.

The city wanted it to be an adventure playground and a place for people to recreate. This is the construction drawing. This is the grading drawing that shows the topography we created to do two things. One, to keep the

stream separate and flowing and the other to create a series of land forms that would cap the most toxic substances and create a wetland, a built wetland through which the storm water, the overland runoff carrying all these nasty things could flow and come out in a more polished sense on the other side.

This is a very functional landscape. As Fritz was saying earlier, landscapes have to do many things now. In certain conditions, the storm water is moved through the wetland to be cleaned. In other high-flow conditions it has to do both, it has to come down the stream through various ways such as a very simple, almost like a lock system preserving the stream and using the wetland. It also has to feed the wetland in low-flow conditions.

So it takes on operational aspects. Here's a landscape operating to make environmental change. In this recent photograph, you can see it's juxtaposed with the urban waterfront across the river. It is a very sculpted landscape that's doing its job juxtaposed with the very remnant, natural landscape enabling it to continued to do its job. These weirs are instrumental to making that water move through the wetlands system and making that water move through the plants clean it before it comes out on the other side. Over time these weirs will probably be invisible. They're already attracting a new ecology behind each of them as soil and water feed these and nurture these spontaneous landscapes that occur behind each of the weirs. It might become harder and harder as time goes by to see that there was a design to this landscape.

Now I'd like to move to Houston, Texas, where we recently completed a project known as Discovery Green. At this point I have to bow to Maconda Brown O'Connor who joined your society today and who was so instrumental in making this project happen. I think Mayor Bill White is a part of your society, as well. And he was very important also in making this project happen.

It's one of those sites that exist in many cities in Texas. I would say most pronouncedly in Houston and Dallas, where there are so many vacant, empty, vast expanses of asphalt used for parking at times, at other times just empty. They're in the cores of the cities. Many of you probably know this site quite well. It's the convention center here, downtown here, Minute Maid Park here and Toyota Center here. It's was 12 acres of surface parking before we got involved.The zoning around this site allowed for all these high-rise residential mixed-use towers to be built all around the project in the future. All it took was getting this project going. We hadn't even broken ground before one of those high-rises had started construction. And now another one is almost finished construction. So the economic catalytic change of this 12 acres has been enormous.

Hopefully, some of you have seen the ULI article that Larry Speck, who was the architect who worked with us on this project, and I wrote for ULI's magazine focusing on what an enormous economic and social engine of change this park has been. Now, Laurie will like this slide because before we began the design of the park Project for Public Spaces had been to town. Project For Public Spaces felt that in order to have anyone come to the project that there would need to be almost as much program as there is in

Central Park. Central Park is 900 acres, Discovery Green is only 12 acres, and we thought perhaps maybe it didn't need quite that much program.

But we knew that it was important to people that this park succeed, that this was a philanthropic effort. They also wanted it to be a place simply of respite and beauty and of a giving back to their community. So as designers—because that's what we are, we're designers—we had to figure out a way to incorporate all this program without making Disneyland and continuing to have a place that would be of the garden heritage of Houston and simply a respite, as well from the urban environment.

This picture is right before it opened. We managed to sort of gang the program all along a central promenade and keep the rest of the park largely green, and to even incorporate 600 parking spaces beneath the sloped amphitheater lawn and the central great lawn. We were also still able to accommodate a model boat pond and restaurants and cafes and play areas and all the other fabulous programs that were desired. I have to say again it was a pleasure working on this with Larry in terms of figuring out how to make this work, in terms of an urban system, as well as landscape architecture and architecture.

Tens of thousands of people came to the opening day and they have continued to come every day since. The restaurant that Larry designed in the park hoped they would have a soft opening. No such luck. They've been sold out every night; it really has been an amazing success.

It's bisected by two axes, two promenades. This is the east-west promenade. This is the one that connects Toyota Center to Minute Maid Park. This is the one along which we put all of the most active uses, all the really built sort of more urban uses. This runs east-west. This is where on one side of the promenade is the park building; on the other side is a cafe. It's where we put the interactive fountain, for instance, which brings bus loads of kids from places that have no swimming pools to play in the water. We ended up having to turn the puppet theater into changing rooms because so many kids were coming to play in the fountain. It was when we were sitting in a conference room in the park building having a meeting about the park when we saw a little naked kid run by that we realized it was time to have changing rooms.

You can see how this central axis is very active and the buildings clip onto it in this very beautiful way that set up these cross-axes going the other direction; sort of simple stitches in the park. This interactive fountain is a beacon at night. It's what you see from downtown as you drive down Lamar to get to the park. Opening day the park was filled and it has been ever since. In fact, last week they opened the ice-skating rink. And it was 80 degrees and you had kids concurrently ice skating and playing in the fountain.

We're recognizing that we're in a part of the world and an era for all of the world when water use is very important. This is what I lecture to clients. It's very important to use water thoughtfully and judiciously. This is one of the ways, using recycled water. Nothing animates public space like water. The other axis, the north-south axis in the park is all based

on this beautiful historic allee of oak trees, a magnificent, amazing row. This used to be a street in Houston's history. I believe you can see a statue of Maconda's grandfather in one of these slides. Larry may talk about this project, this aspect of the project more, but this is the restaurant, this is the nicer of the two places to eat. This is the sit-down tablecloth restaurant which clips onto that allee of oak trees claiming it as its front porch. The building is a sustainable building and a real, real delight to experience.

One of the things that Project For Public Spaces said we needed in the park was a tree house. We couldn't see building a tree house but we did build an upper-level deck that feels like a tree house and you look down into that beautiful line of oak trees. There's the statue. Here are urban gardens, low-water usage gardens with Texas natives, filled with program. These are Doug Hollis' listening chairs. You can sit in those and have an almost whispered conversation across 60 feet and hear each other. People were already enjoying them before the park had even opened and they're still planting the gardens here. Small uses of water make a respite from the city. In these gardens there's also bocce, there's a putting green, there's a bandstand, there are dog parks, everything everybody wanted put into this sort of beautiful framework that made it all sort of graceful and organized.

The pond, part of which is a model boat pond, turns into an ice-skating rink, a performance space, a place to get married, a place to learn about ducks, a place where the native grasses are really taking hold, they are so gorgeous. It's a respite from the city and you can see the two high-rises under construction in the background or at least one of them under construction. People come at all hours. They eat in the cafe that overlooks the central lawn, which is the sort of center of all this. There is other a public art piece by Margo Sawyer who's a native Texan. That's one of the entrances to the parking garage below. The Mist Tree by Doug Hollis. And the play area with children of all ages.

Very quickly, because I realize I'm the only thing between you and lunch, I will go through a current project in Los Angeles which is in between those two scales. Those went from miles of riverfront to 12 acres in the city to 32 acres in downtown Los Angeles in one of the most under-privileged and under-supported areas of downtown Los Angeles. It's near Chinatown. It's down the hill from Dodger Stadium. It's the site of the Chavez Ravine riots. It was the site where Japanese-Americans were interred during the war. It has a rich cultural history, most of it unhappy.

The plan was to put a million square feet of warehouses on this site, but grass-roots efforts led to the state, the Department of Parks and Recreation, purchasing the land for, I think, $30 million for the building of a historic park. It's a new paradigm for state parks because there's nothing of history there anymore. The history is all gone. But it's about interpreting that history and bringing people back and serving a part of the population currently completely undeserved by parks.

It previously had rails on it. You can see a number of eras of history all

together in this map. This dark line was the Zanja Madre which was the Mother Ditch that brought water from the LA River. Yes, the LA River is adjacent to this. It's hard to tell because it's in concrete. But it is a river. So these were tributaries from the Zanja Madre. Then during the time of industrialization, this was the turntable and the roundhouse for the rail tracks. These were all the rail tracks with the station and depot, et cetera. So you had that kind of landscape for much of its history. You had a trestle bridge over it to get the workers from one side to the other.

Here we are with these 32 acres to deal with and many disparate cultural interests to address. We came up with these different uses within the park that transitioned from the urban end of the park where you're adjacent to downtown toward the river end with the pattern that reflects the rail lines on the site. That is in everything we're doing on the site; we are evoking its historic use, its historic nature and making connections. Not only connections or physical connections to adjacent neighborhoods, but connections to past and observations about the future. There are interpretive threads.

We're working, I should note, with Michael Moss, architect and with Ralph Applebaum Associates in the interpretive planning. Many of you probably know their work at the Holocaust Museum in Washington, D.C. No one knows how to tell a story better than Ralph Applebaum Associates. Each of these threads deals with themes from nature to water to culture to industry. Along those threads you can read stories, you can use your PDA to dial a number and hear a spoken story. There are many ways that these stories are being told on the site, including in the welcome station and along the fountain bridge that will connect you to Broadway and in the civic fountain that will be like a train as the water moves along these long lines just as train cars would move through the site.

Along each of these threads of historical interpretation there are places to stop, there are portals of information. These portals are places of shade. It's hot in Los Angeles and there is not much water. These portals are carved with words, stamped with words that are universal to the theme that you're exploring in that portal so that you're washed by these words, these common words, these words that mean different things depending upon your frame of reference, like settlement, like home, like progress. Those mean very different things to each person who's visiting this source of information.

The fountain bridge alludes to the water conveyance system across the site from the Zanja Madre to the adjacent neighborhoods. Performance space is located right on the turntable and will actually be able to reveal the archeological dig of the turntable below. What you see here is the site actually being excavated.

Looking the other direction toward the river, is a series of gardens that address first nature, second nature and third nature. Then the environmental center, a wetland and connection to the river. These are the gardens—closest to the river being first nature, in other words, habitat,

restoration of wetland, marsh river conditions; second nature being agricultural gardens; third nature being ceremonial gardens, places where people can enjoy everything that Los Angeles can grow. In the second nature gardens kids will be able to plant and harvest food and then learn how to cook with that food in the adjacent ecology center, which will have a restaurant that will then serve that food. There are three pieces of architecture on the site: the welcome station, the fountain bridge that comes from the roof of the welcome station across to connect to the upper level of Broadway and the ecology center. You can get on the top of all these buildings. Michael likes to say you can crawl all over these buildings.

There will be interpretive displays inside about the history of the people who made this community and who suffered in many ways through the making of this community. You'll be able to tap one piece of the screen for information. It might say, The Brown Family in Houston, for instance and then you'll see connecting stories through time about that family and all the sort of spurs of information that come from that single place.

As you move through the wetland you see the ecology center here in the background. The ecology center will be an environmental display in and of itself. You'll move through different levels of the building which engages the wetland itself. You can get on top of the building and you'll be able to move through this in a very three-dimensional way. The exhibits will be from a micro-scale to a macro-scale.

In these exhibits you will be asking questions, you won't be told answers. For instance, "How would I control flooding in the Los Angeles River?" You will be given multiple choices. One, to do what they did in history, which is to culvert the river. One would be to let it be natural. You get to push that answer and then see the ramifications that would happen with each of those potential solutions.

There will be a connection to the river. We don't actually own land that touches the river yet, but we will be bringing water from the river by solar and hydro-powered pumps to create this wetland environment and then put that water back in the river in a better state. Here's the Los Angeles River. I know it's hard to tell that's a river, but it's a river with these concrete banks and a railroad track running along it.

Speaker Mary Margaret Jones, President, Hargreaves Associates, San Francisco. Photo by member John Gullett.

These are warehouses we don't yet control. We've already gotten them to agree to let us do this so we can make a green connection to the upper

level of the Los Angeles River. Those warehouses are historic ones; they're quite beautiful. These are not and should go and will go and will allow us to make a connection to the river.

In the future if we can get the railroad company to agree to put their tracks on trestles, we can actually slope the land beneath the railroad tracks so people can move seamlessly and water can move seamlessly from the river to the wetland system and to the park, back and forth. We will have finally made a real connection to the Los Angeles River and been the first project that will actually restore some of the banks of the Los Angeles River. Thank you very much.

MEETING THE CHALLENGE I

BETTY SUE FLOWERS

DEAN STEINER: We'll move on with the afternoon session. I'd like to introduce our session moderator for this afternoon, Betty Sue Flowers, who is, of course, one of our own and the director of the Lyndon Baines Johnson Library and Museum.

DR. FLOWERS: Rather than introduce our speakers, I will refer you to your program. But let me just say a couple of things. One is that what wasn't mentioned today when Lawrence Speck was introduced was that if you go to the Austin airport you'll see his handiwork, and at the Austin Convention Center. Also, that we teach together in a course whose current topic in Plan II is called Happiness. I think I'm going to open him up to any questions you might have later on this afternoon about happiness.

I don't know our second speaker personally, For our third speaker, I had the honor of presenting Ted Flato when I was the public representative to the American Institute for Architecture for the gold medal; the medal for the best architectural firm in the country. I can say that the behind-the-scenes conversation was really interesting and exactly to the point of our discussion here. People were very impressed first by the dedication to landscape and greenness, and second by the way his firm worked in terms of people operating together. That is one of the things we have to look forward in this Part 2 of our topic today, which is people working together—that's all of us—to meet the challenge that has been presented this morning. Here now, is Larry Speck.

Member and Moderator Betty Sue Flowers, Director, Lyndon Baines Johnson Presidential Library and Museum, Austin. Photo by member John Gullett.

Texas Overview

Lawrence W. Speck

Mr. Speck: I hate being behind a podium, so I'm going to join you down there. Actually, I'm going to do an odd thing, something you're not supposed to do as an architect. I'm going to talk without pictures. What is an overview of Texas architecture? What can we say in general about it? After I answer that, I'll frame it back in relation to the things we saw this morning.

My qualifications to give this overview are that I am the ultimate architecture junkie. I am completely hooked on architecture; I love to visit it; I love to experience it; I love to talk about it; I love to read about it; I love to look at it; I love to photograph it; I just love to be engaged with architecture. At this stage of my life, I am more than a junkie, now I'm a pusher. I'm trying to share with everyone else the addiction that I have to this amazing and generative meeting.

I want to talk here about what is it that makes architecture so mesmerizing, so wonderful, and so fascinating and how it's tied to culture. Architecture is a physical embodiment of who we are as individuals and who we are collectively as a society.

In terms of what we're talking about today, architecture is a physical embodiment of who we are as a culture in Texas.

Now, at the very smallest scale is my sweet little grandmother's house in the Hyde Park neighborhood of Austin, where there were two gorgeous pecan trees in the front yard. You went up to a big, generous porch with a swing, through into the living room which had a braided rug on the floor, a nice carved wooden fireplace with colored tiles around it. Her prized possession, a sofa with an embroidered upholstery on it that she had herself embroidered. Her collection of dolls, including her childhood doll with a china head that was in a beautiful shadow box.

Of course, nothing happened in that living room; it was only for show. All the action happened back in the kitchen around her kitchen table. There was an interesting relationship of her master bedroom right off the kitchen, something no architect would do. But in the last decade of her life, when she was a little feeble, it was a wonderful thing to be able to move between those two rooms and live her life in those two rooms of her house and in the little back garden where she still had her vegetable garden. Now, that place was a physical embodiment of who Cora Elliott was as a person. I can't go by that house without feeling a very soft spot

in my heart about my grandmother. That's architecture at its best. It's a physical embodiment of who we are as individuals.

But at another scale it's also that wonderful sequence of spaces in Austin where you come down South Congress Avenue, you see Lady Bird Lake there stretching before you, you go over the Congress Avenue Bridge. There is that main street Congress Avenue going up to that big pile of granite that is the state capitol building. It's going up to it, getting close to it, touching that robust, amazing, powerful granite that came right out of the ground a few miles away, a granite that was so tough and so hard to work that they couldn't do all that little filigree carving like they liked to do in that era. Instead they had to leave it kind of tough and raw.

This building that is big enough to hold the landscape of that entire hill in Central Texas much better than the warty little thing they put there in the 1850s. By 1880 they had aspirations. They knew what this state was going to be and they built this amazing, big thing that talked to the aspirations of that culture.

On the next hill up starting at about the same time, they built the University of Texas. By the 1930s they built a second major edifice, this really ballsy tower that they put up there; what some called at the time the phallus of the Southwest. Not what anyone thought of as a university campus building and way out of scale with what that city was. But it was emblematic of a university that grew into that building, that became the kind of major institution that the building foretold; a huge campus that now feels comfortable with that landmark in the middle of it.

That sequence of Congress Avenue, the state capitol building, the campus, the tower, all of that is a physical embodiment of who we are in Texas. It speaks to a confidence, a bravado. It speaks to ambition. It speaks to laying down roots. It speaks to making a mark in that beautiful landscape of what this state would be. And it was built as our Capitol. Now, that is for me what architecture is at its best.

It's not just making buildings but the impact that the buildings have on us. Winston Churchill said, "We shape our buildings, thereafter our buildings shape us." That's very much true. We make something, it affects who we are, we make it as a reflection of us and then it also has a powerful impact on who we become.

Now, for me, the very most important aspect of architecture is not us looking at a building in a picture, it's not us even looking at a building as we stand there in front of it and look at it. It is in the living inside buildings that the real power comes out.

The real power of architecture is to affect us at an unconscious level so that if we were in a room that had raked seating and was more an auditorium style and I was up on a podium and I was behind the lectern, I would have a different relationship to you than if we're on a flat floor and you're in chairs and I can walk down among you and say, "Mary Margaret, so good to see you." The difference in those relationships makes huge differences in our lives, how we live, how we relate to each other. It's an uncon-

scious thing. We're not thinking about the physical environment and how it's impacting our interaction here, but it is impacting our interaction. That subliminal impact is what's so important in architecture.

Now, what is the lesson about Texas architecture? How can we make that in a larger frame and especially with what we've been talking about today? We can read our environment to give us messages about who we are as a culture, who we have been in the past. It lasts a long time and it continues to communicate. But also, everything we build projects into the future; who we will be as a culture and how we will affect future generations.

Now, I'm going to lean back on Mary Margaret's presentation this morning and talk about one of the projects she showed us. Mary Margaret and I worked many long hours together on that project; we had an amazing, large team of people. We have to admit this is what we do, cultural manifestation. It's not done by an architect or a landscape architect. It's done by many, many people. In that instance Mary Margaret and I were working with an amazing group of people. Three large foundations in Houston, along with the City of Houston initiated this process. Many people in this room were involved in that. The Houston Endowment, which Jack Blanton is Mr. Houston Endowment to me; Ann Hamilton, also from the Houston Endowment, they were involved in the conception of that project. In the Brown Foundation, not only Maconda, who was recognized earlier, but Izzy and other people in that foundation, as well. Also very, very instrumental, were Rich and Nancy Kender; Nancy in particular, who was a powerhouse through that whole thing. Another instrumental person, Guy Hagstedt, who was a kind of staff person through the whole thing, a phenomenal guy, former student of mine, I might add, who was ramrodding the whole thing.

So this was a cultural thing we were doing. We were going to say something about the culture of Houston, Texas in our own generation. Just like somebody else said something about the culture of Texas in building the state capitol or the culture of Texas in building the tower at the University of Texas. This was a cultural enterprise. It was about conversations with the community, it was about conversations with our clients. Out of that comes an artifact. You saw Discovery Green earlier and I couldn't show you any better photographs than those beautiful ones that Mary Margaret had.

I want to talk for a moment about what does that mean, Texas culture? What does it mean about us today? What is it when a city like Houston decides instead of building another big monument of an art museum or another big, spectacular spectacle of a performing arts center, instead they build a park. Not a home for the elite but a place for everyone, every member of that community to participate in.

If you go there today—and it's a gorgeous day in Houston and I'm sure it's full of all of these people right now—you'll find some people out on the terrace of The Grove, the restaurant we designed. They'll be affluent

people because it takes a little cash to go into The Grove. Then maybe sitting on that terrace out there having their drinks and maybe a young couple with their kids and they're playing out under those live oak tress down there. It's a wonderful thing to be able to have a place where the kids feel wonderfully at home and the adults feel great and at home, too.

At that very same time there may be a Hispanic family from a poor neighborhood, some of the demographics we were talking about this morning, who brought their cooler. They've got lunch in their cooler and a few cokes. They've spread out under those same live oaks trees. Their kids are playing in that park, too. The little rich kids and the little poor kids, they don't know any different; they're playing together.

That's really the story of that park. It's an amazing confluence of this rich, cosmopolitan city that has people from all over the world. It's the United Nations in Houston these days. They are Vietnamese and they are Pakistani, Arab, Anglo, Hispanic—everybody. In that park you see that confluence of people really making a city together. One huge cultural message is who are we, as Texas. You can go into that park and you can feel who we are; we're being a community together in that park.

There are other messages about that, too. We're talking about the oil and gas capital of the country, maybe of the world, Houston, Texas. But here was a group of people who said they had a commitment to these environmental issues that we were talking about this morning. They decided that they were not only going to do a park that respects the landscape and respects nature and injects nature back into the downtown of a city and relieves that kind of heat sink that downtowns are so much by some relief of green space. They were not only going to do that but they were going to at every step do what is environmentally correct. They are going to get a Gold-LEED certification, which is checking all the boxes and making sure that you're covering those bases. Also, in a very sincere way just making something that is environmentally friendly.

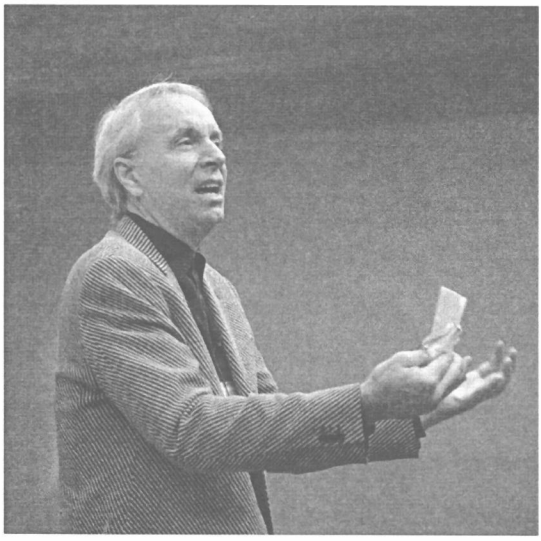
All of the buildings—Mary Margaret was talking about how it works and how it is a social phenomenal; how it brings people together, those two axes. Those north-south and east-west axis also allowed us to put all of the buildings long and thin on the north-south face and short on the east-west face. Then we could take advantage of the sun to get the sun when we want it and keep the sun out where we don't want it. We also oriented all of the glass in the buildings to the north, not to the south or the west so that we get good, soft, and even light into the buildings. We could tuck those buildings up against the live oak trees so that we get the soft, dappled light through them instead of the harsh, glaring light that we sometimes have in Texas. We made the buildings respond to nature, climate, sun, breeze as optimally as they could.

Then even beyond that, we have to have some energy. It is, after all, Houston. We have to air condition, so we did put a huge photoble tank array there, sponsored by BP Solar, who kicked in a million dollars for photoble tanks. All of those roofs are aligned so that they catch the opti-

mal angle of the sun to mount those photoble tanks. In addition, we added solar hot water heaters; all the hot water is by solar energy. Many different energy-conserving things go on from the parking garage underneath to all of the buildings in the park.

In addition to that, every material in that building was thought through, in terms of where it came from, what kind of environmental impact it had, what kind of life it had, what kind of recyclability it had, as Stephen was talking about this morning. We basically have three materials in the park that we use in the buildings. We use sustainably grown wood which means that it's certified to have been grown and farmed so that it didn't cut down any old growth forest or anything like that. We have steel that is all recycled steel, which is extremely easy to recycle. The third major material is a wonderful gulf coast brick. You know, we don't make much brick on the gulf coast anymore, but we found one stalwart brick maker who makes that wonderful soft gulf coast brick that you see all over in downtown Houston. We didn't have to ship it from a long way away. It's a local material. We didn't have to pay for all that transportation and all that heavy material coming from somewhere else. It also supports a local economy, an economy that had been hit by Hurricane Katrina. This guy was just getting started again and it was heartwarming to be able to work with him.

This is an attitude that culture espouses. It's a set of priorities that the client group promoted. That's how architecture becomes a physical embodiment of who we are as a culture. I want to leave us thinking about architecture in this context, not as buildings, not as monuments, not even as beautiful things, but as supporters of a life, influencers of a culture and expressions of who we are.



New member and speaker Lawrence W. Speck, Principal, PageSoutherlandPage, Austin. Photo by member John Gullett.

Living Green in New York City

Rafael Pelli

Dr. Flowers: Our second speaker has a name that is synonymous with architecture and now is synonymous with green architecture. We have one of the world's foremost green people right up here with us. Please welcome Mr. Pelli.

Mr. Pelli: I'm thrilled to be here, I guess in honor of the presentation this morning about the ensuing demographics. As a second generation Hispanic, I have to say my Spanish probably isn't really up to it, so I'll continue in English.

I want round out the story which you have been hearing from a number of different perspectives today; to give you a snapshot from the front lines of designing buildings with very, very ambitious environmental design guidelines and objectives and some of the challenges.

Over the course of the last eight years and building three different buildings at Battery Park City in New York we have looked at just about every technology out there. We've employed microturbines, we've got 45 percent fly ash or slag in our concrete mixture. We've looked at it and done it all. But we're really coming up against certain thresholds and are now trying to go back and look hard at the data, both the analytical data during design process and the actual operations of these buildings to find out what's working, where we have to go next with this. I think the next oncoming challenge is with the climate change.

Battery Park City is at the tip of Manhattan in New York City. It used to be in the shadow of the World Trade Center, which is no longer there. Marilyn's firm is designing a couple of new buildings, one which is completed and one which is underway. We have designed a few buildings starting in 2000, one is called The Solair, the second is called The Verdesian and the third os called The Visionaire. That's how they're known out there in most of the publications so I'm going to stick to those names, but I didn't have much to do with coming up with those names.

This was the result of Battery Park City Authority, which is a state organization, in the year 2000 making major policy initiative under Governor Pataki to let this portion of Manhattan be a learning laboratory for the construction industry in New York. They required a whole set of very ambitious criteria for the buildings. We were designing buildings to meet

a voluntary program under the U.S. Green Building Council called LEED, which Larry just referred to and others have referred to before. This is a building rating-system where you want to get a gold star or a platinum star, a silver star. The voluntary program has had an enormous impact on the way that environmental design is characterized in this country.

Battery Park City took it further and actually made a number of things very prescriptive. They required photoble tanks. They required a water treatment plan. They required us to do a number of things that went well beyond what Lee did. And then finally, there was the green building tax credit, which was offered by New York State to help offset some of the costs.

There was a lot of overlap between slightly different objectives in this and a number of strategies which were in a sense given to us. We just had to figure out a way to implement them. Here is the building as it was completed with a photoble tank array both on the front and on the top of the building. Down at the tip of Manhattan the second building took place just behind it. Because it was the first it was watched with great interest. Here's an article from the New York Times in 2004 after it opened. It was a subject of great interest for technical reasons, for sort of intellectual reasons, but also for financial reasons. The development industry was looking very hard at this. There were another eight building sites that were going to come available, all these in yellow here, and they are going to have to meet the same objectives. Some developers felt that this would never fly. You never pay the increased premium costs.

Not only did we meet it, but it came on line because construction was stopped after 9/11 when there were a lot of vacant apartments down there due to the destruction of the World Trade Center. The building filled up quickly and at a premium and actually, a greater premium than the developers had even needed to amortize the additional debt. So it was a rousing financial success story.

Now, of these further eight buildings, they are all built or currently under construction. The development community has now adopted this as a standard for it from a marketing standpoint, the meeting of objectives for building new buildings. It's really becoming kind of an evolving standard of the industry.

There's a lot of attention to the exterior wall. I'm going to get to that point again and again because really, it's the oldest idea in the book but it remains the most potent. Also, what you do with your exterior has more to do with the energy profile for the building than anything else.

We looked at a traditional brick and block wall—Battery Park City requires brick. And we took it through some wind tunnel testing and through some computer simulation studies to understand how it functioned. We made about 50 modifications to it and came up with a new way to build a brick and block wall which performs better.

I'm giving you an idea of the range of strategies. This is a green roof, a planted roof, which basically means there is a soil layer which serves as

insulation and it ejects heat in the summertime by evapotranspiration. It is amenity space.

This is a lobby, and I want to speak about the materials used which were selected both to be at a close distance and for their chemical composition. This is an analysis of where all the materials on the project came from. One of the issues that has come up is the transportation of materials which is often times the biggest energy costs in the use of those materials.

The only visible representation of the environmental objectives of the building is this photovoltaic array, which sits both on the front of the building and up on the bulkhead. It is wonderful, it's actually beautiful material and very sympathetic with brick and it's very granule, it's very modular. I think the photovoltaic array, while it serves as a symbol, actually creates a complicated relationship with what we believe the role of technology is in all of this. I think it was referred to earlier by one of our speakers that we're always of the belief that the next best machine is going to solve it all for us. In the notion of green buildings it really has become translated; our photovoltaic array is going to solve problems, it's going to produce all this great energy or the next generation photovoltaic array or the fuel cell, some technology is going to drive the energy solution for building usage in this country.

Technology is having profound affects in two categories. One of those is in the tools by which we design buildings. These are computer simulations through a piece of the exterior wall of the building. They're looking at temperature and they're looking at temperature flow, known as flux. That's a piece of the brick wall. There's some glass up above, glass down below. Here's the floor slab. And what's really interesting is we learn how the heat moves through a wall through these simulations.

Now, these diagnostics techniques didn't exist when people were building these buildings 20 years ago, barely even ten years ago. But through them you can take any form of construction and make a number of intelligent decisions about how to make it work better. That technology has been profoundly influential to how we design. SOM has been at the forefront of a lot of the good work with computer modeling to do very large-scale buildings and predict air flow and energy usage. So that's where technology has had a much bigger impact, frankly, than photovoltaics, which remain a very costly technology. It's not really something that in and of itself makes much sense. It uses a lot of materials which are then difficult to dispose of in the future.

So that was the completion of the first building. These pictures were taken from the river side where it gets a lot of sun, which is why we have mostly western facing photovoltaics because we don't have sun on the southern side.

From there I'm going to go to our newer building. Our newest building on the southern tip and is now actually employing a host of newer technologies, some modifications to what we've done on the first building. This one is called the Visionaire. It is no longer a brick building. We got a variance to do a terra cotta tile building, which is all integrated into

a curtain wall which is a different way to build a wall than a brick and block wall.

You'll notice we have the photovoltaics there on top again. You notice it is a very glassy building; a lot of new architecture is trying to be very glassy. But it presents a fundamental conflict. What's the number one thing I need to know to determine whether this building is intelligently designed with regards to the environment? It is the percentage of vision glass on the exterior wall. For large-scale buildings, that will tell you more about how intelligently it is designed than almost any other number you can ask for because where you have the glass, you're losing heat, you're losing cooling, you're gaining heat. It's much harder to control. It's the oldest idea; all architects prior to all of our free electricity, of course, knew this. We have to relearn it.

So to get a glassy building, this is what our client wanted. We had to work hard to actually have that glass covering up insulated walls. It is still glassy in appearance but it is only a couple percentage more in vision glass. Balancing that percentage is really critical. It is a big indicator to the performance of the building on almost any scale.

The selection of materials is also important. Getting in a lot of daylight but looking at naturally harvested woods, looking at materials that have a benign chemical composition is still an ongoing, critical investigation. A lot more products exist now compared to 2000 when we designed the first building. A wood block floor in the lobby again; a lot of natural light surrounded by trees. We face north and slightly west and to the west we have a lot of trees which provide shade. There is another green roof, amenity space with a beautiful view out to the Statue of Liberty. Underneath the hardscape there's a layer of soil which retains water and which also serves to cool in the summer. Photovoltaics again, integrated into the roof of the building. The terra cotta tile down more in the base of the building.

We have for all three buildings a water treatment plant. The fresh water comes into a water tank, comes through from flushing toilets, for laundry, and goes down into a water treatment plant that treats 30,000 gallons of water a day. That water is then supplemented by storm water, which is both retained on the green roof and in a storm water retention tank. That goes into a resupply mechanism for flushing toilets, irrigating the roof gardens.

What is the biggest user of water in an urban building? I never knew this until I went through this exercise. It is evaporation in the cooling tower. The evaporation in the cooling tower for this building is about 20,000 gallons a day through all the high season. It dwarfs everything else—showers, laundry, you name it. Has nothing to do with where the real water use in an urban environment is and raises some interesting questions about the use of water in urban environments. For example, we bring the water in frm tens or hundreds of miles away, through reservoirs and through watersheds, then we filter and clean it and for what use? For evaporation.

I don't think it actually makes much sense at the building scale. It's

a very costly solution. We were mandated to do it. But as a distributed infrastructure strategy, I think it actually makes a lot of sense when we get into water issues. New York has abundant water. It's not critical. In the Southwest, though, I think this could be very important.

Now, looking at the energy use across the design of these three buildings, we looked at how they related to code. They were all about 40 percent better than code, but code is a very moveable target and a hard thing to define. We were much more interested in looking at it in an absolute way. So energy intensity is actually a better number. It's more like miles per gallon; it's an absolute, hard number. You can really look at well-performing buildings by their energy intensity. It's a much better indicator than their relationship to code.

Average energy intensity for a multi-family residential building in the U.S., according to the Department of Energy, is about 126,000 BTU per square foot per year. Our building in the Solair was better than that, but not nearly as much better as we thought it was. When we went back to investigate why, it was because the ventilation systems were bringing fresh air into the entire building and the water treatment plant was using a lot of energy. So again, from a policy standpoint you get into some competing objectives here about what's more important, the energy use or some of the other strategies. At Battery Park City, air quality was a critical strategy issue.

We actually looked very hard at the ventilation strategies for our third building and we were able to bring it down significantly. We were required to supply fresh air to every apartment. This is really much more of what you see in an office building than a residential building. We still have operable windows. We had to get into what that really means, what governs the supply of the air in a typical apartment. Here's looking at a plan of a typical apartment. Well, governing the supply of air was how much air you were exhausting. There is no requirement, no standards for fresh air supply in residential buildings in New York City. But there are standards for exhaust, which were designed about 80 years ago with tenements in mind to promote healthy standards so that you don't get mold; you don't get mildew; you get rid of food odor.

But all that was just sucking in air from the outside. Now, we're supplying fresh air. Well, we've got to balance the amount of air that's being thrown out. So we were taking this enormous amount of air and filtering it, humidifying it or dehumidifying it, bringing it into these apartments and while they were empty we were still ejecting that same amount of air at a constant 24-hour-seven-day-a-week basis. So it actually had a huge energy consequence doing that.

We got pilot approval from the Department of Buildings to calibrate the fresh air supply to what people need from fresh air supply standards—this is looking at Swedish standards, European standards and some domestic standards—so that we could then balance the amount of fresh air to the amount of supply better and start from the supply side, rather than how

the exhaust side. In the final building we were able to actually create a kitchen hood that you could ramp up so that when you're cooking, you can get rid of the odors better and you can get a higher rate of exhaust in those buildings.

I know this is all a little bit technical, but I'm trying to illustrate the kinds of interrelated issues and complexities you get into when you have to design these kinds of systems. There are competing objectives. We were then able to also put heat-recovery systems on this and recapture a lot of the heat as it goes out the building to cool or heat the incoming air. So this is a view of the nearly final building.

I wanted to show you one last example. I'm focusing specifically on energy because again, this is where more and more of our focus is going. Let's look at an academic building for a new business school in Champagne, Illinois, for the University of Illinois. It's a U-shaped building wrapped around a central common space, one very large open space in the center. Here is a panoramic view from within the courtyard with all native plantings except for one piece of lawn which the University still wanted so that students could sit out on it. Everything else is no-irrigation, native planting.

We were able to bring down the energy use of this building about 40 percent. The energy intensity numbers actually correlate to this pretty closely. Typical for the U.S. is about 60,000 BTU per square foot and this building is about 41,000 BTU per square foot. It was primarily through two strategies. One was in the lighting and the other one was through heating and cooling, which had everything to do with the exterior wall and therefore, being able to make smaller, more efficient mechanical systems behind the exterior wall.

We came up with a facade design strategy which was as much tied to ideas about lighting the classrooms as anything else. We had clerestory light. These were all blackout for presentations. We combined clerestory light with light shelves so we could bounce light deep into the room and then coupled that with various fissured fluorescent fixtures which were on dimmable ballasts so the lights could dim automatically when there's a lot of daylight. That allows for minimizing the amount of artificial light when you have a lot of daylight to work with. All of these are on a complicated sensor system tied to the central building management.

And again, here you get into the control systems. Technology use is making buildings more intelligent, making them more sensitive, making them able to better respond to the conditions that they have. This is another computer simulation, hard-to-read diagrams. These are plans of the classroom. These are what are called daylight autonomy studies, which allow you to study how far under different scenarios you can penetrate light into the room. By being able to do these studies we're able to calculate how much daylight will get into the room which allows the lighting engineer to design their lighting systems differently. You get the full benefit of that kind of analysis. Again, it's the use of technology as a

diagnostic device and an analytic device, rather than as a product or as a piece of it.

Here is a photograph of a piece of the exterior wall. Here is where we have offices so we don't need clerestories. The wall is only about 20 percent vision glass averaged over the entire building. It's a very solid, very efficient wall which was achieved by increasing the amount of insulation in the wall and by having triple panes of glass. We have what's called the two plus one, because we've integrated blind systems into it. By making a very, very good envelope to the building and limiting the amount of glass, we were able to design significantly smaller heating and cooling systems. It's what Texas architecture was based on before air conditioning, right? You designed good walls, good, deep walls and you let it cool off at night and keep the cool in during the day. That's what we need to get back to, using that basic methodology. This is what's called the displacement ventilation systems, which is also very efficient.

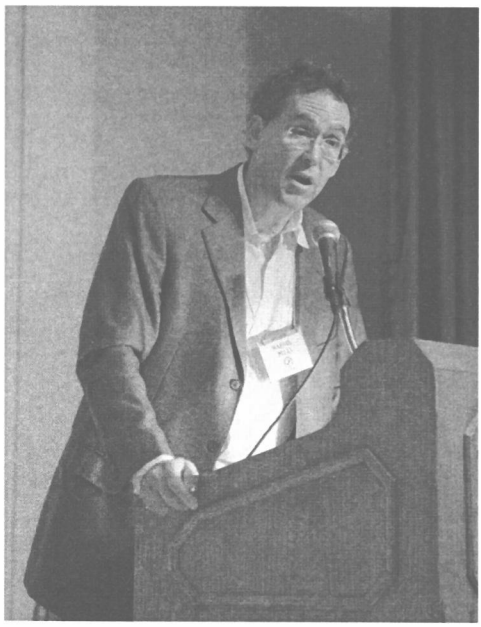
We had very, very efficient exterior all around. That allowed us one flourish, one very large pane of glass to what we saw as the heart of the project. It's a reading room for the institution. The business school wanted a 24-hour environment where the students could get together. They wanted as much possible space as they could get. We created this room more along the lines of a reading room at a library than a formal atrium, which is in a sense surrounded by breakout spaces also on the balcony levels and the central staircase, which then connects all the stairs—the floors, the three main floors of the building.

I'm going to conclude with one last thing. I think I've been focusing a lot on what we have been charged to do, which is design these buildings as efficiently as possible. But there's something in the end, when you really look at the environment and buildings; we make the buildings the villain in some ways. You're talking about architecture using 50 percent of the energy. The line of the building itself is a pretty artificial line when you start thinking about environmental consequences. You have to think both outside of the line of the building and you have to think about the infrastructure of the land use planning within, which is the functioning of the building. The building is really the inheritor of a lot of other decisions, including whether you need to drive 20 miles to get to work every day, whether there's transportation, the utility systems around it, whether there's a good infrastructure for dealing with wastewater. The building can't be responsible for all of the infrastructure issues.

Just as importantly is what's inside the building. In the end, it's us. The buildings don't need to keep themselves warm, except very minimally. They're trying to keep us warm and us cool. And we, as human beings, actually are pretty adaptable animals at least up until about a hundred years ago when we decided we no longer need to be adaptable because we can heat and cool ourselves to within a degree. Now we have mechanical systems that use a great deal of energy to make sure that it never gets hotter than 74 degrees and never gets cooler than 70 degrees. One of the

biggest things you could do to change the energy use in a building is simply to start looking at aspects of human adaptation.

The standards for comfort in America are actually much tighter than in England, in Europe and in Asia. Particularly the sort of tropical countries which have always learned to dress differently when it's really hot; when it's cold you wear a sweater. The energy use attributable to keeping it at 70 degrees rather than 69 or 68 is actually enormous and would largely overshadow many of the other things I've been talking about today. And with that, I'll conclude. Thank you very much.



Speaker Rafael Pelli, Principal, Pelli Clark Pelli Architects, New York City. Photo by member John Gullett.

Sustainability in Texas

Edward Flato

Dr. Flowers: Everyone in San Antonio knows Ted. I think one of the themes that begins to emerge this afternoon is visionary leadership, as well as the visionary architecture. And San Antonio certainly knows that story.

Mr. Flato: We are kind of overlapping and working as an overall orchestra here. Rafael talked a lot about sustainability which is my subject is, as well. I may not get quite into as much of the technology so just assume that all of our buildings do all those remarkable things that his are doing. You know, I spoke with Larry a little earlier in the day and he had a completely different presentation that he was going to do. So I was very blown away that you just tossed it out; it was marvelous. I really appreciate it.

I am going to be talking about how sustainability comes home to Texas and I'll give you some examples here in Texas. I feel that it's an incredible opportunity we have here. In the past, we architects tended to focus on only inventing wonderful new forms. Now the direction, at least in terms of doing true sustainable architecture, is to let the environment and lead the way; to create architecture that is responsive to real issues.

The beauty of that is that you end up with architecture that's very particular to its place. That is something Mary spoke about earlier in the day, about what makes our world wonderful in terms of architecture is these unique places, Seville or Marrakesh or Rome or Venice. All of these are very particular places. That is what sustainability is pushing us back towards; creating architecture that is unique to its particular place. You heard a lot about the different environments and ecosystems and beauty that we have in Texas. But the beauty of Texas is this diversity and it screams for different responses when you're working in different areas.

It's fun to have the Philosophical Society together because we're all from different parts of the country and from Texas. You can very much appreciate the logic for having something that's particular to West Texas so that when you see that architecture you know you're in West Texas. Or East Texas and that wet Piney Woods or south Texas and that scrub we get down there and the kind of architecture that really resonates in that environment or in this area of central Texas with our great, abundant limestone and great tradition of building.

Rafael alluded to this idea that sustainability really begins without the technology. Going back to what architecture was before central air conditioning and heating systems allowed us to ignore the environment.

This is the infirmary at Fort Davis. I show this because of its immediate response to the environment. It bellies up, first of all, against a cliff that is blocking the north winds. It is one room wide so it allows for great cross-ventilation. It has this great dog run that enhances that ventilation. Then it's all covered in this great deep porch that allows the building to hide from the sun. There is a lot to learn from older architecture. This is one of the methods of thinking about the form and how you place buildings and how you embrace very typical issues of working with the environment.

The importance of material; sustainability is a lot about trying to deal with transportation costs. One of the beauties of thinking about materials that are grown locally or that are available locally is that the buildings then are very much of their particular place. You can only imagine Fredericksburg all built out of limestone. This is a road cut, one of my favorite cuts out on I-10 that takes you beyond all the sprawl of San Antonio where you just get to nature and you see that beautiful limestone sliced through dead horizontal, kind of emphasizing the hills. We have some remarkable materials at hand and some great talent at hand. That is what sustainable design is all about, taking advantage of those things.

A third piece is thinking about materials in a really smart, efficient way. You don't have to go back very far in our ranching, agricultural tradition to when people valued those materials a great deal. They were frugal and ingenious.

I love the upper right-hand corner shot, which is a shade structure that goes over cattle pens. It's just light cable and sheet metal, but it created all the shade you need to work cattle. The slide in the upper left-hand corner is of oilfield pipe. Going out on ranches you see how remarkable people are about using that recycled material. That is an example of a highly sustainable design that has been going on for a long time. We just need to bring it back now and celebrate it. The lower shot is a metal shell structure, a classic agricultural form, but it is using material in a really thoughtful, efficient manner, spanning a big distance, also serving as the roof.

I'm going to walk through three projects with the intention of exploring three different regions of Texas and talking about how those sustainable buildings are very particular to their place and therefore, successful. Not only are they using less energy but they're also giving the feel like they could only have been built in that particular place. First we're going to go down to the Rio Grande Valley then go over to East Texas and then finally, in the medical center area in Houston; two landscape building opportunities and then finally, one right in the heart of one of the densest areas in Texas.

This is the World Birding Center, a Texas Parks and Wildlife project built adjacent to the Benson Wildlife Refuge that was a preserved area of tamaulipan scrub that you may know of. The Rio Grande was once

an incredibly vibrant ecosystem. The river was flowing like gang busters. Before we had many dams in place, you had a flooding system that encouraged some remarkable landscape, incredible habitat. It still is an amazing place to go birding because a lot of birds are coming through that area. But because a lot of that area has been turned into agricultural land, these precious places of that original scrub are extremely valuable and they're very important places to preserve.

We had this remarkable location of this great scrub but instead of building the visitor's center right there in that beautiful scrub, we built in the onion field, just that raw, open, depleted onion field. We thought of the building very much as a way to start, to create some examples of how you could restore the landscape. Also, because it's the visitor's center, it needed to create the opportunity for birding. We needed to bring back that landscape and start to restore and mend this old onion field.

We built the buildings very much like how Fort Davis was done, where the main axis ran east-west, so very little exposure to the low-angle hot, western and eastern sun. By doing that you also end up having a southern and northern exposure that you creates great light opportunities and great cross-ventilation opportunities. By doing a series of narrow bars you're also getting great balance of daylight, you're getting light from both sides. I's an opportunity to create courtyards which are opportunities to have a new, vigorous landscape. We built adjacent to the irrigation channel. The tamaulipan scrub on this upper slide, off to the left.

The idea was to treat water as an incredible resource, as it is. So we were saving the water off the roofs and collecting it in cisterns and using that for irrigation. We're also using the irrigation channel to help us recreate the old flooding system that you get along the Rio Grande to create these garden opportunities that are flood irrigated: they flood and then they dry up for a week and then we flood them again. By doing this, we started bringing back that landscape.

The amazing thing was that we created a habitat and because all our buildings were so close to that natural habitat, people had more time to spend in that habitat. They were in shade under these deep porches, they started noticing some wildlife that they had never even known existed there at the place. There were two butterflies spotted in our little butterfly garden that they didn't even know existed in this area. All that in a former onion field, very successful indeed.

Part of sustainable concepts is trying to mine your program for different opportunities. In this case because it's a visitor's center we could afford to build less air conditioned space; to make circulation as an outdoor experience. As you're walking through the facility you're closely connected to the outdoors because that's why you've come to this place. First and foremost, just building less conditioned space can often create more dynamic buildings.

We used this shell structure that was very efficient, it could span that entire width of these buildings and used very little energy. It also became

the roof, as well as the structure. We had deep porches and overhangs to protect the spaces beyond and dog rungs to facilitate cross-ventilation. Because we had an east-west axis there was very little sun coming in, just great light and that connection to the outdoors.

The materials were harvested from nearby. In this case, we used clay tile that came from that area and using the recycled brick and wood from the area. We used a completely different building system when we were in the scrub, away from the visitor's center. No concrete in here. Resting lightly on the land. We did what we called screw footings that were just auger piles that dropped down into the ground. This is a hawk-viewing tower that's out in the scrub area. We treated that scrub with something that it deserves, which was a very special and now very unique landscape along the border.

Now, going all the way over to East Texas, this is the Shangri-La Garden that is a 180-acre garden right in the center of Orange. This is another natural area, but right in the center of a small town. It's was a collaboration between the Stark Foundation and a remarkable science teacher that was there.

The lake was created by Lutcher Stark; it was a dream of his. He called it Shangri-La and he built it in the 1940s, as I recall. He created a lake out of the wetlands and created a remarkable azalea garden and it was one of his great loves. One winter it froze, there was incredible freeze, there was snow in Orange. He lost his azaleas and it broke his heart. He basically left it to seed after that.

Well, the great thing about nature is it will take things back and it will start to restore things. This lake became a heronry, an incredible dense heronry right in the center of the little town. We placed the visitor's center in this case as a transition zone as you come into the garden with the idea that locating large infrastructure should be placed in an area that has the least amount of impact on a site. We created a courtyard and in the middle of the courtyard is a wetlands-cleansing system that starts to solve the problems with that lake and that heronry which currently is—or when we started the project—was oxygen-starved because it was carved out of the wetlands. It no longer had a traditional circulation system.

Again, here with a great deal of celebrating the rain, we set up a system of collecting the rain, collecting it into a series of collection pools, cleansing that water and then turning that water back into the natural wetland systems. The main gathering space is an outdoor room. A lot of the circulation system is outdoors, which also doubles as the gallery space. You start to tell stories in open-air spaces again. You're taking circulation and program and you're putting that outside. You're building less building with less footprint.

Then here is this water-cleansing system that is taking the lake water and running it through a series of polishing ponds or polishing cells and then returning it back to the lake in a clean state. The beauty and fun aspect of this project was that all of these sustainable infrastructure sys-

tems and solutions were very much apparent when you're in the building. By the way, this is a platinum project, a high-star rating. This is the only project in Texas, as well as the Gulf Coast, that's received this level.

The buildings out in the landscape touched the land very lightly, using felled wood from both Rita and Katrina. Rita hit right as we were working on this project. We took advantage of the problems, local problems, and used those materials. Bird blinds were also built out of recycled wood.

Thinking about the transportation system on a place like this, we used electric boats rather than walking through the landscape so that we had less impact on the landscape. We had these more remote facilities that are completely off the grid that are also built out of that felled hurricane material.

Finally, an urban solution here at the University of Texas Medical Center right across the street from M.D. Anderson. The idea here is, again, to think about all the buildings around the one you want to build and how you can start to create a campus. In this case it's the University of Texas Health Science Center. The nurses and the nursing administration on this project felt it was critical that the building spoke to their culture and the notion of a healthy building. This was a number of years ago, probably the first LEED gold building in the state.

The University of Texas, probably to Larry's credit, felt it was worthwhile to spend 5 percent more for a sustainable building. That's about what it cost. As opposed to these earlier projects where we could choose our solar orientation, here we had major challenges. We had a very strong east and west exposure and a remarkable park adjacent to this building. We had to think a great deal about the different skin systems, how we were going to get balanced light with low-angle sun conditions.

We thought a lot about all the facades, the roof. Because we had this remarkable park, we felt it was important that the park be the soul of the overall medical center, and that our building become the portal to that park.

It's a vertical campus, so we needed to create what would normally be a campus quad but in a vertical complex. What we did was we created a grand dog run in the middle of the building that's an open-air space, like a great lobby, and put critical programming around it and then opened that out to the gardens.

We thought again about each facade with a different method to solve the different solar conditions. On the park side we did vertical fabric panels that would block the low-angle sun when it crept slightly north or slightly south, and still bring in as much daylight as possible and open up views to the park. On the west side we used a perforated metal skin system, a recycled aluminum skin. We originally had a two-story brick building, so when we took that building down, we recycled all that brick. The finished building was about 90 percent recycled material.

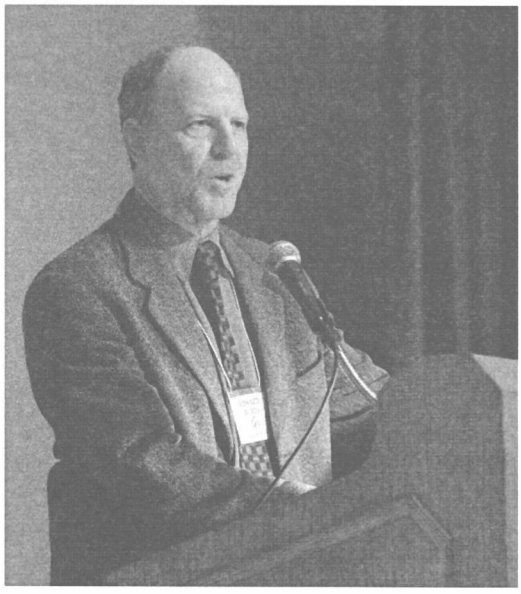
So we had these two skins, the perforated metal skin and aluminum skin that faces to the west. The western views were not so incredible and it

almost added to the impression of the overall medical center looking west. Then looking east, there were the vertical fins blocking the light. Then the grand dog run that runs through the space that allowed us to do what we call right sizing. There was a request for a grand lobby, a huge space, but that would have required a large amount of air conditioning. Instead we made it an outdoor space and made it an even more public space and then placed critical program elements around it like book stores and the cafe. It became a normal campus quad.

We also thought about, which is a very important part of sustainability, how light would come into the building. Rafael talked a lot about this and he's so right. I led off on this whole idea that low technology is the first way to do sustainable design. The beauty is that you're getting buildings that are very particular to their place. You don't rely completely on technology to create buildings that use less energy, but you do use a great deal of technology in figuring out how light can enter buildings. That's what these studies are. What we found in a vertical campus is that we could get a lot of light from the different facades, but to really bring daylight, great daylight, into the building we needed to bring it in from above. So we used a series of atriums, three atriums. Rather than just bring in traditional light through skylights we used a frosted glass system that was highly studied to get diffuse light, that better quality light coming into the building. Bright light makes a dimmer area even dimmer.

In the spirit of wrapping up, many of us have been talking about the same incredible opportunity that we currently have. Buildings represent almost 50 percent of the energy use in the country. If you consider how many buildings we're always tearing down, how many new buildings we're building and how many buildings we're remodeling, the amazing thing is by 2050 two-thirds of our building stock will be built, will be new or have been touched by us. That means that we have an enormous responsibility to build buildings right. Every time we build a building incorrectly, it will offset every building that we build well.

Sustainability allows us to have a road map for buildings that are very particular to their place and that are beautiful because of that. Thank you.



Member and speaker Edward Flato, Principal, Lake|Flato Architects, San Antonio. Photo by member John Gullett.

Discussion:

AUDIENCE: Ken Shine. I wonder if you would comment on another aspect of health that goes beyond the healthy building itself, but the healthy environment. We've seen construction in this country since the Second World War that has exploded the number of places without sidewalks, places that have no opportunities for people to get physical activity. They are no parks right next door and there are substantial portions of the population who go from house to vehicle to building back to vehicle back to house. The social networks that we've been talking about don't exist.

I just wondered whether you've been thinking in terms of both issues; of place and health and the implications of architecture for creating a healthy environment for people.

MR. SPECK: I'll make one shot at that because Mary Margaret and I are working on a project right now that is a campus for a major corporation. It's terrible for the socialization and a sense of community for the people who work at an organization where people park, walk into a building and go back to the parking lot and leave.

In our case we're making them park somewhere and walk on a street to get to where they go. And it's really about health; it is about that simple activity of walking, which is incredibly healthy, and also about socialization that goes along with that. When you are walking you encounter people in a different way and you stop and you talk and it makes you feel a part of a community.

One precedent for that is the campus for Sprint, the communications giant in Kansas. They actually put their parking lots far away from their buildings for the very reason that their health insurer gave them a break if they would have their employees walk. That speaks to how powerful this can be in terms of increasing people's health.

DR. FLOWERS: I think that also speaks to the intermixture, the system, if you will, of public policy and architecture. That leads to a question I had, wondering what public policy we support. Sometimes in our green spirit we might mandate something that actually looks good, but isn't, as you pointed out.

How could we as concerned citizens support intelligent public policies that don't hamstring experiments that might lead us to better solutions and at the same time do things like give a break to the company that has their employees walk more.

AUDIENCE: We're the second most populous state. We have three of the top ten largest cities. We have enormous universities, the world's biggest medical center here. Where do we stand in the overall world of architecture as a region, in terms of style, money, innovation? Where do we fit out there in the world of architecture? When they think of Texas on either

coast are we at the cutting edge? What's our profile out there, our region of Texas architecture by other people outside our region?

DR. FLOWERS: Sir, are you asking that of the Texans on the panel or of the outsiders?

AUDIENCE:: Oh, that's a clever one. Rafael, what do they think of us in New York City?

MR. PELLI: Well, we don't put sustainability and the environment to the top of the sheet. We're not known for that. If you think about some of the things that Murdock was bringing up about the growth of our state and couple that with the amount of buildings—this kind of 2050 and two-thirds of our built environment coming up—Texas will have an enormous impact on a built environment. But I think it's safe to say that we're not known as being highly innovative in terms of building systems. What do you think, Larry?

MR. SPECK: Boy, you could get me started on this and I get foaming at the mouth about it. But, you know, the truth is there would be very few people in the United States who would tell you that three of the top ten cities in population are in Texas. The rest of the country doesn't think of us that way.

There are many, many things about Texas the rest of the country doesn't understand. I think architecture is very much the same way. We are known for having some of the very finest jewels of architecture that have been built in the latter part of the 20th century in our state. The Kimball Art Museum is sina qua non. You're going to find no building in the United States with more respect than that building, and internationally than that building.

There are other incredible buildings: the Menil Museum in Houston, Penzoil Building in Houston. There are any number of buildings that have huge respect. But our perception from the outside is probably faulty, at best. I think that's partly because we're not a media center like New York is. So things are seen second-hand, third-hand, fourth-hand.

MR. PELLI: I'll give you my perspective which is very consistent with Larry's. Texas is certainly known for having some exceptional individual pieces of architecture. The Kimball Art Museum certainly comes to mind at the top of that list. Certainly, it had a period of corporate architecture buildings, really state of the art corporate buildings.

Beyond that, though, the two other things that immediately come to mind when I think of Texas is that Texas is one of the areas that has really best fostered a kind of contemporary architecture that still has strong regional roots. I think Ted's work and his firm's work has been sort of exceptional and probably one of the leading kind of lights in that regard.

Texas has successfully maintained an identity, particularly with smaller scale architecture in doing contemporary, not traditional, but sort of contemporary architecture that still clearly feels of its place. I think it's done better than most other regions in the country.

The other thing is although Texas at large is not known for its environmental initiatives, the City of Austin certainly is. I think in the environmental community there are people from the City of Austin who have been very influential and the experiences in the City of Austin have been very influential. The City of Austin actually is one of those hotbeds for environmental activism and thinking about buildings and the environment in that world.

DR. FLOWERS: Well, we are going to hear from the mayor of Austin after the break.

AUDIENCE: Larry, you waxed eloquently about your grandmother's house. My guess is that today down the street or, indeed, right next door, there's one of those mega-mansions; a big, ugly, ostentatious multi-million-dollar homes. Zoning only goes so far and it's very hard to legislate taste. But what can society in general and your profession in particular do to prevent ugliness first and, perhaps more positively, to provide incentives for imaginative, creative architecture?

MR. SPECK: You gave me the right lead-in. Actually, it turns out that in my grandmother's neighborhood has been remarkably well preserved, I'm happy to say. There are many neighborhoods in Austin that have fought like hell to keep those mega-mansions out. We do, in fact, have an ordinance which has been very controversial but has attempted to do that.
I think I said that architecture is a physical embodiment of who we are as a culture. And, it also shows our bad sides. It shows our greed. It shows our pretension. It shows our selfishness. It shows our lack of a true sense of beauty, as we saw in Steve's presentation earlier of the Tuscan Sun house in the Hill Country. It shows our sense fantasy about who we think we might want to be—rich and cultured—and if we're not, it comes off hollow.

I think the thing we all need to do, and our profession can help, but it's all of us as a culture, is understand what real value is and what important things are and not succumbing to pretension and greed and things like that because they effectively show themselves in architecture. We should be looking at things that we screw up and say, "What does that say about us and how can we fix that?" Architecture is a great kind of bellwether for telling us who we are and what we might want to change.

MR. FLATO: One of the things about this whole notion of sustainability is that it is a real direction that people can embrace. There's a little less about taste and more responding to real issues.

If you start thinking about using local materials and responding to the environment, you start getting architecture that is very particular to its place. When we're working on new development we sometimes get to write the restrictions. Besides creating a great kind of urban experience, how do you get architecture without having a taste police on hand at all times; how do you bring architecture around?

The notion is creating rules that are about real issues. You choose just a limited number, like palliative materials, which is being responsive to the sun and to the wind and to the rain. Before you know it, you have average architecture that's pretty great because it's all logical for that particular place.

I think the direction that a number of our cities are moving in, is requiring LEED buildings. That's helpful, but it's hard to just legislate beautiful buildings. No question about it. But I see the glass completely full with the challenges that we have ahead of us, which is to say I feel that architecture can start to be more responsible and beautiful.

Meeting the Challenge II

Betty Sue Flowers

Dr. Flowers: Once again, I think we have a diversity of presenters. I think they will raise some issues that are pertinent to all of us. Once again I will refer you to their bios in the program and not introduce them beyond just saying, at least for Bob Yaro, I think we decided to start with New York on the grounds that if you can do it there you can do it anywhere. But from what we heard about green and Texas maybe we should change that to Texas.

Building a Sustainable Future for the Texas Triangle Mega-Region

Robert D. Yaro

Mr. Yaro: I'm going to talk a little bit about the Texas Triangle Mega-Region. I'll go into that for a moment and then I'm going to take a minor digression to talk about today's headlines and how that might affect our discussion here.

The Texas Triangle is a mega-region, a term that we came up with about five years ago at the University of Pennsylvania. It's a 40-year-old idea originally developed by Jean Gottman, a French geographer, to describe the then emerging northeast megalopolis—the continuous band of urbanization between Maine and Virginia—which was a visionary thing when it was first discussed by Gottman back in the 1960s. Today it's very much a reality.

I teach at the University of Pennsylvania along with Laurie and Marilyn. I did a study five years ago, it was kind of an immodest study that I put together, looking at national growth trends and looking at the then brand new census forecast that suggested that the U.S. was going to see a 40 percent increase in population by 2050. We started to imagine what the country might look like in 2050. Among other things that we discovered when we did fast-forward with population growth and land use change, was the emergence of not just one mega-region, the term that we use for these networks of linked metropolitan areas, but ten of them. In fact, we've identified an eleventh in the front range cities that stretch from Laramie, Wyoming, to Denver to Colorado Springs and all the way to Albuquerque. But suffice it to say for the moment, the definition that we've been using is for these linked networks of metropolitan areas that share economic sectors, infrastructure, natural systems and in most cases, political and social and cultural traditions.

Of course, the Texas Triangle. I think Marilyn Taylor had the map earlier today that we developed of the national system identifying these areas and then the Texas Triangle. It encompasses San Antonio, Austin, Houston, Dallas, Fort Worth and the areas in between.

Each one of these mega-regions is quite different. In the Northeast we really do have an almost continuous band of urban development. Suburban New York overlaps a suburban Philadelphia and so forth. I think it's clearly emerged already in Dallas and Fort Worth. It's starting to emerge in the I-35 corridor between San Antonio and Austin. If you go to San Marcos you can see the great coming together on either side of I-35, of almost one indistinguishable mass of exurban development that connects these two places.

Clearly, the Texas Triangle shares an economy. There are economic sectors that tie together Houston and Dallas and so forth. A lot of this can be discerned in the patterns of travel: the very frequent air service between these places and automobile traffic between places like Dallas and Fort Worth and Austin and San Antonio. Also, in the forecasts that we've done and the Census Bureau has done, the 16 million people who live in the Texas Triangle will be sharing the place with several million additional residents by 2050. This is unless there are some strategies put in place. This is what we've included.

I know Fritz Steiner and his team at the University of Texas and a team at Texas A&M have also looked at the Texas Triangle and reached the same conclusions that unless we see very different patterns of development and very different approaches to preserving things like the Edwards Aquifer and other groundwater resources, this region will be impaired in the future. We have to change the way we do business.

Before we get to that conversation, I wanted to have a little brief commercial message for the national and the regional economy. I'm trying to find a slide that characterizes where we are today. That is the former galloping herd down on Wall Street which are not galloping any longer. We're having this conversation today during the deepest economic crisis since the Great Depression. President-elect Obama said today in his radio address that he intends to proceed with the most ambitious stimulus package and recovery program. They're using the term recovery in the Obama transition team and not stimulus because what they intend to do is to create not just short-term employment, but a long-term transformation of the infrastructure systems of the United States and create the capacity to promote new economic activity for generations in the future.

Marilyn Taylor's punch list for us this morning was ways to create a more sustainable future; I'm going to mention them again. Take note of them because I think we ought to come back to them. The notion that we need to focus on first is infrastructure and using infrastructure to promote and enable a compact urban and suburban development of walkable communities, creating a public realm in each of those places that become magnets for people and jobs and economic activity and education. The bucket of cold water we got this morning from Mr. Murdock and the Census Bureau about changing demographics and aging represents a very real challenge of bringing a large group of immigrants and their kids into the mainstream of our society.

One of the things we need to do, what Marilyn suggested, is make sure that the public K through 12 education system and the higher education system do what they're supposed to do: bringing those folks into the mainstream of our economy and our society.

Also, transforming the way we use energy, moving away from carbon-based fuels. Those are the things that we need to do. President-elect Obama discussed that in his radio address today when he said that this painful crisis "is an opportunity to improve the lives of ordinary people by rebuilding roads and modernizing schools for our children and by investing in clean energy projects."The numbers that have been coming out of Congress and out of the Obama transition range, but they say around $136 billion. I have to keep remembering to use the word B—billion dollars for this infrastructure investment strategy.

In the New York Times today there were suggestions by a group of economists that said what we really need to be thinking about is a stimulus and a recovery package of approximately $600 billion a year for the next couple of years; about $1.2 trillion. What we're talking about is the biggest public works program in American history and the opportunity to create the kind of transformation that the interstate highway system had. The last time we did this, it was part of a strategy developed in 1939 by the National Resources Planning Board, which was the planning arm of The New Deal, when they were planning public works projects. They proposed a national toll road and free road system, an unlimited access highway system that would cover the entire country.

We saw Mr. Murdock's maps of where the growth is occurring in the country. Most of the growth is occurring in places that benefited from these very large public works projects first envisioned by the National Resources Planning Board in the 1930s for The New Deal. The Board created the interstate system, created the big rivers projects, the big irrigation projects, the navigation projects and flood control projects and hydro projects that made the South and the West possible. Things like the Tennessee Valley Authority, the Colorado River Project, the Central Arizona Project, the Bonneville Power Administration, the Grand Coulee Dam and so forth.

That's what we need to get back to today. I wanted to say one other thing; I think this ought to be a topic of discussion over the next day or so and I will encourage you to focus on the decision that Congress is going to make on the elements of the stimulus package in the next three or four weeks, something like a $300 to $600 billion investment strategy by the time they are done.

The principal criterion is being able to get money out the door quickly for shovel-ready projects. The challenge before us is that the shovel-ready projects tend to be things like adding an inch of new asphalt on every highway system. I know my three departments of transportation, if left to their own devices, they would much prefer to add a couple lanes to your local interstate system than just about anything else. It doesn't take a lot

of imagination to see TxDOT investing a big slug of infrastructure money on two or four more lanes on the Katy Freeway.

I'd like to talk about the national trends behind this infrastructure strategy. A big one, as we heard this morning from Mr. Murdock, is the rapid population growth and the kind of demographic change that's under way; strikingly, 140 to 150 million additional Americans in the next 40 years. That is about what we added between the end of the Second World War and the turn of the century. Bear in mind that we are at capacity; we've used up all of the big infrastructure systems here in the Texas Triangle and across the country that our parents and grandparents created. We have to not only maintain what we have, but build a whole new energy efficient and less carbon productive system. Both a challenge and an opportunity, I think, as everybody has noted.

Globalization is another issue; the fact that a third of our economy is tied to international trade. It's up from less than a quarter only about 15 years ago. The airports and seaports and highways and railroads are just tied up in knots with containers moving in and out as part of this changed economy. Crumbling infrastructure is another. The I-35 corridor up in Minneapolis that collapsed last year got everybody's attention. We continue to have inequalities in the way regions and cities grow, with massive growth at the fringe. Finally, patterns of metropolitan development are an issue because they cause so much congestion, increasing travel times and commuting distances.

All of these issues are shaping mega-regions. Here they are, the 11 mega-regions; the ten that we identified five years ago and then you see the 11th, the gray area in the middle of the country that's the front range mega-region. Together these places encompass about three-quarters of the population of the country, close to 90 percent of the economy of the country and it's where nine out of ten of the new jobs and new residents are going to land.

There are some places that are outside of the mega-regions that will also grow, places like Omaha and Kansas City. But for the most part, this is where the growth is going to be. You can see in the Texas Triangle, this is where something like 75 or 80 percent of Texas will grow. I always get a big kick out of talking to Texans and Australians about the great traditions of cowboys. In Australia, it's the Outback. Texas and Australia are both big places with big myths about their countryside. Most Texans and most Australians live in big metropolitan areas. In fact, most Texans live in this one large mega-region.

You see here, shaded along the coastline, we've identified another mega-region that meets Houston with the Texas Triangle and that's the gulf coast mega-region that stretches from the Florida panhandle west all the way to the Mexican border. Five out of the 11 mega-regions extend across the U.S. border into Canada and into Mexico or in the case of Florida, into the Caribbean. This is going to be an interesting challenge, not just working across state borders and county borders, but creating institutions that, in fact, can work across international boundaries.

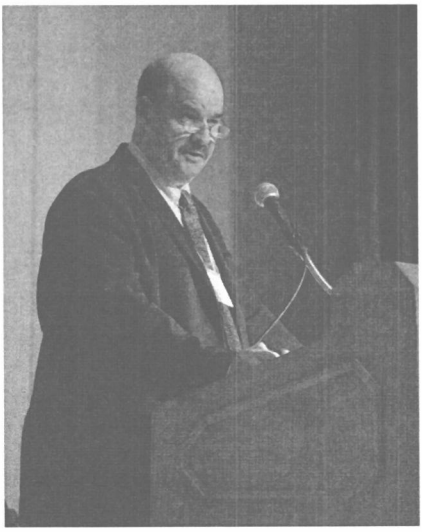
I'm always struck when I go to a place like Buffalo or Seattle or Vancouver and talk about this. You look at the maps of these metropolitan areas and the other side of the border looks like the pre-Columbian maps of the world. We know that there's life down there, but we're really not sure what those people are like.

Then you go to Holland, for example, and you find that the Dutch are working on strategic plans for economic development and mobility and environmental restoration across the Belgian border, across the German border. These are places that were at war with each other half-a-century ago and are now working across borders.

We had a presentation at the Brookings Institution a couple of months ago from the German Transportation Minister talking about their new national goods movement plan in the Federal Republic of Germany where the Germans states are working together and then working across international borders to seven other European countries. It is an integrated, thoughtful goods movement strategy for the whole country and all of central Europe. We got to the end of the discussion, where a bunch of very bright people were providing deep insights, coming out of this experience. I raised my hand and I said, "So does this mean that if we had a federal government we could create a national goods movement strategy, too?" And there was a kind of stunned silence. I guess it could happen.

Well, it turns out that my friend, Bob Fishman, a professor at the University of Michigan and I commissioned a paper about the tradition of American national planning and infrastructure planning. Bob describes it this way: it looks like an act of bureaucratic hubris best left to the French and then goes on and says, "au contraire." It turns out that the first advocate for national scale infrastructure planning in this country was a much respected gentleman named George Washington. In his spare time between being commander-in-chief and president, he was an entrepreneur and tried to build the Chesapeake and Ohio Canal. There are little vestiges of it in Washington and other places you can visit. He had an impossible time trying to get the State of Maryland and the State of Virginia to work together to build this thing under the Articles of Confederation. President, then private citizen, Washington insisted that the constitution include an interstate commerce clause that would provide a role for the federal government in promoting interstate compacts to create multi-state infrastructure systems.

Then his successor, twice-removed, I guess, Thomas Jefferson, after doing the Louisiana Purchase in 1808, asked Albert Gallatin, his Treasury Secretary, to develop a national plan that would lay out major infrastructure systems designed to tie the sections of the country; the Northeast and the South and the Midwest and the West, the Louisiana Purchase, together into national systems. They came up with this map on the left here; a network of national roads and canals and river and harbor improvements. Importantly, a mechanism to pay for it, which was a process in which the federal government would make grants of land to entrepreneurs in what we now call public/private partnerships to build these things. All



Speaker Robert D. Yaro, President, Regional Plan Association, New York City. Photo by member John Gullett.

the canal rights-of-way, of course, became rail rights-of-way when the railroads came along 20 or 30 years later.

This is what made it possible to build the nation's 19th century infrastructure. It's what led to the development of the continental railroad in the Lincoln administration. It's a mechanism, this idea of the federal government collaborating with private investors to build important national infrastructure systems is something that is still of importance to us today. A century later, another ambitious president, Theodore Roosevelt, decided that we needed a new national plan for the 20th century. He asked Gifford Pinchot, his Forest Service Director, to develop a new national plan, this time organized around conservation and resource-based economic development and aimed at underdeveloped and underperforming areas of the country like the South and the West. Initiatives in 1808 and 1908 do suggest a cadence; 2008 would be a nice time to be thinking about it. This is the national proposal for what became the interstate system; it came out of a national plan in the 1930s. Those of you that think infrastructure should just be paving contracts, this is the West Wing of the White House being built in 100 days by WPA; we'd like to remind the president as he's sitting in the oval office.

Basically, the idea is to focus first on transportation, which we're doing. We're developing a concept for a trans-American network of high-speed rail lines and improved freight links and airports and seaports that will be going to the Obama transition people shortly and then to Congress. We're following it up with similar systems for water and for energy.

The fact is that unless we get our act together, at least immediately in the next three or four weeks, Congress is going to be making decisions that hopefully, we're going to be rejoicing in, but that we may regret unless we are able to shape them into long-term investments that will shape sustainable communities in Texas Triangle mega-region and across the country. Thanks very much.

Fort Worth Today and Tomorrow

Fernando Costa

Mr. Costa: I'm Fernando Costa from Fort Worth and I'm delighted to have the opportunity to spend time with you here this weekend. I hope to explain how we're applying some of these lessons to a specific community in Texas: Fort Worth.

I expect that most of the folks in this room have had occasion in the last ten or so years to visit Fort Worth. If you have, if my assumption is correct, then I believe we have here witnesses to the kind of growth and change that we've been experiencing. It's been remarkable.

Yet Fort Worth is still Cowtown; it's still The City Where the West Begins. We take a great deal of pride in that western heritage. At the same time, we have a lot to learn about preserving and even enhancing our quality of life while to accommodating extraordinary growth. I'd like to take a moment to impart some of these lessons to you as I believe that they are relevant to communities large and small throughout our state.

I begin with this notion of cowboys. Cowboys and Culture is more than a marketing slogan in Fort Worth, it's truly a way of life; that mix which is so special, not only in Fort Worth but in other communities across the state, that folks from far away may find hard to understand. It's a reality of life in our community.

We have many special places in Fort Worth that celebrate our unique culture.

Sundance Square in the heart of downtown Fort Worth, featuring Bass Performance Hall designed by David Schwarz. It's a great place, a very active environment and it was practically dead as recently as 30 years ago. Today it is one of the most vibrant places in Texas. Our cultural district is home to several world-class museums designed by some of the finest architects in the latter part of the 20th century. For example, the Amon Carter Museum. Ron Tyler is Director of the Carter and it was design by none other than Philip Johnson, who did most of his great work right here in Texas.

We've spoken at length today about the Kimball Art Museum, a masterpiece by Louis Kahn. Just two weeks ago we heard the announcement about a new building to be a part of the Kimball campus to be designed by a long-time associate of Louis Kahn, Renzo Piano, who has unveiled a

schematic design for a new building that I believe will be sympathetic and compatible with the masterpiece of Mr. Kahn. And, of course, the Modern Art Museum, the newest addition to our cultural district, designed by Tadao Ando, already a great piece of architecture on the Fort Worth landscape. I'd be remiss if I didn't mention the historic stockyards; an icon of the Old West which continues to be vibrant to this day.

These kinds of places and what we call the "Fort Worth way of doing business" have given rise to a greater attention being assigned to Fort Worth and, in fact, recognition recently of Fort Worth as one of America's most livable communities by Partners for Livable Communities. We take a great deal of pride in that designation, though we're keenly mindful of the problems that we face as we seek to accommodate rapid growth.

Here is a shot of the Fort Worth city limits which encompass over 300 square miles. Equally important, in the yellow area, is the extraterritorial jurisdiction, another 300 square miles; all told over 650 square miles of planning area within Fort Worth jurisdiction. And we're growing very rapidly. Our population now exceeds 700,000. As you can see, it exceeds the bottom line which represents the population forecast from the North Central Texas Council of Governments. If we continue to grow at the current rate, it's not inconceivable that in 20 years that we'll approach the 1 million mark.

Here you can see a graph of the fastest growing large cities in the United States. Growing at three and a half percent per year over the past seven years, Fort Worth is actually the fastest growing big city in the country. We have now reached the point where we're the 17th largest city, having recently surpassed Memphis and Charlotte and Baltimore. Austin, with Mayor Wynn carrying the flag for them today, is well ahead of us and continues to grow at a rapid clip, addressing some of the very same issues that we're facing in Fort Worth.

Where is that growth occurring? Well, if you look at a map of the single family building permits, much of that growth is actually occurring outside of the central city in the far north and far northwest parts of Fort Worth, an indication of what many of us might describe as suburban sprawl. These are just building permits issued during the first ten months of this calendar year.

What's the national economy done to our building activity? Well, with respect to single family residential, the market has plummeted in the past two years. That's not surprising. But if you look at it in some historical perspective, we are really back to a more normal rate of growth. So we're still doing remarkable well even in a weak national economy.

If you look at the total volume of residential and commercial activity, you'll see that we project for calendar year 2008, to have the second busiest year in the history of Fort Worth with respect to the valuation of construction in our city. Here is a map showing you the locations of some of the higher priced commercial projects, including the new Omni Hotel and Condominium in downtown Fort Worth.

Well, if these trends continue, according to the Council of Governments, we're going to see increased suburban sprawl with the darkest areas on the map representing those areas that are likely to grow fastest in population. This is merely a forecast. We don't have to accept this view of the future; we can change it. It requires a conscious effort on our part today to make a difference in the way our community grows.

We can't ignore much of the activity that's occurring right now in the form of natural gas exploration under Fort Worth itself in what is called the Barnett Shale. This is one of the most productive natural gas formations in the country and it's located right under Fort Worth. In fact, you can see it doesn't even go very far into Dallas County. Fort Worth has been exceptionally fortunate economically to capture the benefit of the Barnett Shale. We have over 1,200 active gas wells in the city limits of Fort Worth. This is not in the countryside; this is in neighborhoods. You can imagine the land-use issues that are associated with the compatibility of natural gas drilling and industrial use with the residential environment.

Some of us have talked about suburban sprawl. I want to make reference to it in relation to Fort Worth without going into great detail. A study done not too long ago by Cornell and Rutgers for Smart Growth America looked at different characteristics of metropolitan areas, looked at the strength of downtown and other activity centers, residential density, the mix of housing and jobs and services within neighborhoods and street productivity as indicators of compact urban form and measured U.S. metropolitan areas with respect to those indicators and came up with an index called the Sprawl Index. The lower the number the more sprawling; the higher the number the more compact.

The national average by definition was 100. Fort Worth/Arlington was 77, not doing very well; Dallas, 78. Fort Worth/Arlington was in the top ten of U.S. metropolitan areas with respect to suburban sprawl. Not the kind of top ten listing that we enjoy having. Here's Fort Worth relative to other communities with which we compete for economic development. Again, 100 is the national average. Atlanta, the poster child for suburban sprawl, 58. Fort Worth and Dallas well below the 100 mark. Austin can take a great deal of credit for compact urban form. They have an index of 110. Denver and Portland, with which we compete for jobs, for families, well over 120. Those are examples of good, compact urban form.

So what can we do about it? We know about the effects of suburban sprawl. It's not healthy; it's not good for the economy. We have a comprehensive plan which we update every year and relate to the city budget as our principal means of making policy decisions about the city's growth and development. We outline a broad vision for the kind of community that we want Fort Worth to become. We want it to be commonly recognized as the most livable city in Texas. And we go on to explain what we mean by that livability.

We have certain themes that begin with economic growth and meeting the needs of a rapidly expanding population. And we go on to talk about

revitalizing central city and promoting compact mixed use and industrial growth centers and celebrating one of our great natural resources, the Trinity River. This is a map that depicts locations of those multiple growth centers that are located throughout Fort Worth. We know that we can capture much of the development in downtown. But there are many other parts of Fort Worth that have the capacity in their infrastructure to accommodate that kind of development.

Let me just mention three big projects that we have underway in an attempt to transform our community with respect to the pattern of development that we've been experiencing and so as to arrest the kind of suburban sprawl that's been affecting all of our cities and metropolitan areas throughout the country.

The first is Trinity Uptown, a big project actually conceived by a Canadian architect, Bing Thom, who we brought to Fort Worth to help us to generate ideas about the Trinity River. The idea is to build a new bypass channel that runs along the railroad tracks on the west side of downtown and thereby allow us to remove the levees, the structural systems that currently separate the city from the Trinity River, bringing development down to the water's edge and effectively doubling the geographic size of downtown Fort Worth with higher density residential and mixed use development.

It is an extremely ambitious project that's already receiving considerable funding, both locally and from our federal partners in Washington. Congresswoman Kay Granger has been instrumental in making this project a big priority in Washington.

Some important development projects are already occurring in Fort Worth as a consequence of that vision for Trinity Uptown: a new Tarrant County College downtown campus, a new development around the LaGrave Field, our minor league ball park, home of the Fort Worth Cats; a new building for Chesapeake Energy which was originally built for Pier One Imports, and Trinity Bluff, a higher density residential development overlooking the Trinity River.

Another big project is Lancaster Avenue, the redevelopment of a street that actually had a freeway running overhead for many years, choking development in the south end of downtown. We have removed that freeway and have redesigned the street as a catalyst for economical development in the south end of downtown. Within the next few weeks we'll be installing six sculptures that you can see in the median of the street that will be lighted at night. The sculptures take the form of art deco elements; it's going to be a real signature piece and you will hear much more about it in the weeks ahead undoubtedly.

And again, private sector investment is occurring. As a result of that investment in our public infrastructure, a new Omni Hotel and Condominium, the largest commercial project in Fort Worth, which will turn the historic Texas Pacific passenger terminal into loft housing, actually high-priced condominiums. A new Sheraton Hotel and a new municipal

parking garage characterized by the use of public art to bring that building to life.

Finally, I want to mention in the way of transformational projects, our Urban Village Development Program whereby we're changing the way we think about commercial districts and turning them into walkable mixed-use urban villages. Here's a map showing 31 commercial corridors, automobile-oriented commercial districts of a mile or more in length that were distressed in declining and economic activity. We wanted to do something about them. Every city has these declining commercial corridors.

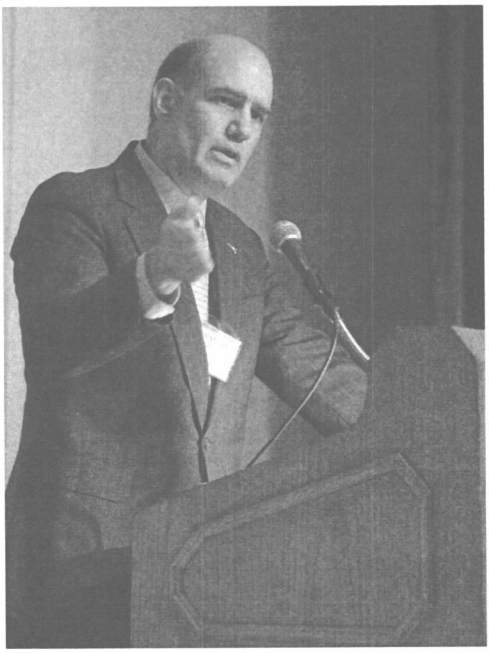
I showed this picture just last week to our Realtors Association. I asked them where they thought this place was and I had 12 different answers. This is a fabricated image; it's nowhere. And yet, it's everywhere. This is what American cities look like today. No one in their right mind would want to go there to live or to work or to recreate or to do anything else of a legal nature. In fact, you don't even see a person on the streets.

We're going to change that picture. We're going to make it look something like this. And that, in fact, is what we're doing. We have 16 designated urban villages in different stages of transformation. We're using a strategy that involves capital improvements, economic incentives and mixed-use zoning that eliminates regulatory impediments to desirable development. Here is a picture of just one, the most successful urban village to date just west of downtown Fort Worth between downtown and our cultural district. It has projects like Montgomery Plaza, an adaptive re-use of a historic Montgomery Ward's building; Museum Place, a fabulous mixed-use project just north of the Modern Art Museum; South of 7th; and another project called West 7th. It's completely changing the west side of Fort Worth.

Let me mention what we're doing in respect to the transportation. We're shifting our emphasis from highways and arterial streets to rail transportation, as well as pedestrian activity. We're now pursuing a new commuter rail line that will extend from far southwest Fort Worth to the north entrance of DFW Airport. That is coupled with the proposed modern street car system. We have a study committee that will be reporting to the city council later this month with their recommendations for a starter corridor that will connect downtown to the cultural district, the hospital district and the lower income neighborhoods in southeast Fort Worth.

I'd like to close by summarizing some of the changes that we've made in the way we think about becoming a more livable city. We have changed our preferred development pattern from one of dispersal and sprawl to one of more compact multiple growth centers. We are changing the way we think about commercial development from single-use, automobile-oriented commercial corridors to mixed-use urban villages with walking environments that can be enjoyed by everyone.

Multi-family development is no longer a dirty word in Fort Worth. In fact, we're not seeking to scatter them and isolate them and fight them at



Speaker Fernando Costa, Assistant City Manager of Fort Worth. Photo by member John Gullett.

every turn. We're trying to invite them in a targeted way to appropriate mixed-use districts. And neighborhoods are actually asking for apartments in their urban villages. It's a radical change from the way we thought about apartments as recently as a few years ago.

I mentioned we're moving to a multi-modal approach for transportation. Zoning is now done more proactively and inclusively. Most areas of Fort Worth are being changed with respect to the zoning, not so much by property owners individually in an ad hoc fashion, but by the City of Fort Worth itself understanding that zoning is a tool for implementing our comprehensive plan and that we ought to use that tool in an intelligent way.

Annexation is being used in a more intelligent manner. The comprehensive plan is what Mayor Moncrief calls our game book for making decisions. Citizens are no longer merely consumers of public services; they are our partners in the delivery of those services.

We've learned that among our keys to success are our common vision, consensus about where the community wants to go and taking the time to build that consensus, providing leadership, there's no substitute for leadership in the public and private sectors, creating partnerships across the board and always a bias for action. Don't study issues to death; move forward and take action. Thank you for your attention.

Urban Planning in Austin

Will Wynn

Mayor Wynn: I'm going to take the lead from my friend, Larry Speck, and just walk around a little bit so I can see the slides. I am really pleased to be in San Antonio; love the city and love not being in Austin for a weekend. Some of you may know that the official municipal slogan for the City of Austin is "Keep Austin Weird". I was in San Antonio a couple of years ago and in front of about 500 people, San Antonio Mayor Phil Hardberger gave me a t-shirt that said, "Keep the Weird in Austin". Phil's a funny guy.

This is an honor for me, but I'm a little intimidated to do it. I feel sort of like Elizabeth Taylor's seventh husband on their wedding night. I apologize in advance, I'm going to try to blast through about 30 slides and summarize three major urban planning initiatives that I've been blamed for.

The first is our redevelopment of the old Robert Mueller Airport. The land is 750 acres, two miles from UT, three miles from the CBD, surrounded by mature, fully developed neighborhoods and represented a remarkable opportunity. Ten years ago we built the new Bergstrom International Airport on the 4,000-acre Bergstrom Air Force field, a whopping six miles from downtown.

As late as 2000, when I was first elected, they were still debating about whether or not we should keep Mueller open as a secondary airport, even perhaps general aviation. That year I was able to help convince a council of colleagues to hire a distinguished urban planning group called Roma out of San Francisco to help us come up with what we ultimately approved the next year. This is the master plan, a very dense, mixed-use transit-oriented development with about 4 million square feet of commercial space, which would equate to about 10,000 employees on site, and therefore, about 4,600 residential units of all shapes and sizes and price points that would equate to about 10,000 residents. Plus, 150 acres of park land, lakes, hike and bike trails, civic uses rounded out this really aggressive and progressive plan. In 2001 we formally adopted the master plan, essentially the zoning in the master plan to make all that happen.

One of my favorite stories comes from my very first city council meeting in June of 2000 where one of the 150 items on the agenda that day was to award a demolition contract of $500,000 to demolish the four airport hangars you see there on the left. Well, those hangars are in a spot where

likely the first two or three, maybe four phases wouldn't even get to. That site wouldn't be ready for development for five, eight, perhaps ten years. So I suggested to the council in my very first meeting to delay spending the $500,000 for six weeks. I ended up negotiating a lease with a non-profit group called the Austin Film Society for one dollar a year. So we didn't spend $500,000; instead we got one dollar a year.

Since then, $650 million's worth of film has been shot inside those hangars, a total economic impact of about $3 billion. In November of 2006 I asked the voters and they approved about $5 million in bonds to allow us to invest in those hangars. We are now significantly upgrading them with energy efficient air conditioning, all kind of stuff.

In 2003 I was elected Mayor. We had the existing master plan in place. It included 4 million square feet of commercial space, about a million of it designated as a corporate office campus for a major employer. At the same time, the Seton family hospitals were operating the relatively small Austin Children's Hospital within the public Brackenridge Hospital near downtown. They had just purchased 50 acres of land up in Williamson County, just inside the city, on which to build a new state-of-the-art children's hospital. I really wanted that in the center of town near all of our other potential medical infrastructures. So we quickly changed the master plan—which I thought we couldn't do—virtually overnight and re-designated the corporate campus for medical purposes. And last year I helped cut the ribbon on a $300 million state-of-the-art, LEED-certified children's hospital, just a staggering asset right in the middle of the Mueller development.

Here's some of the housing from Phase I. Again, the housing plan was for 4,600 units, everything from $120,000 to over a million dollars, every product, shape, size, configuration, and 25 percent of which is permanently affordable to folks earning less than 80 percent of median family income. We do this via land trust. We actually own the land publicly, underneath 25 percent of the homes. They're interspersed throughout the development and indistinguishable from the market-priced housing. We had 354 homes on Phase I. We had 4,200 full price offers, a 12:1 ratio. We just kicked off Phases II and III.

Now, let's talk about the block-headed urban planning that occurred long before my tenure in office, thank you very much. In the late 1960s, early 1970s, UT's student population was exploding. A 14-story building gets built in west campus and, yes, it's ugly as hell. The body politic in Austin howl and a reactionary, block-headed city council passed a moratorium and a height limitation placed over all of west campus. Two perfectly predictable things happened. Number one, 8,700 poorly planned student apartments get constructed on East Riverside Drive housing 15,000 students. In effect every morning, or afternoon, we roust these kids out of bed and dare them to get to campus; dare them to cross the I-35 bridge over Lady Bird Lake that carries 274,000 cars a day. Block-headed stuff.

The second perfectly predictable thing that happened was that west campus started to deteriorate, started looking like hell and became unsafe for young women at night. My election in 2003 apparently scared just enough people to where even some of my detractors listened to me. I told them I would work really, really hard to try and protect the truly historic, detached single-family neighborhoods like Hyde Park to the north of campus, but I need some open field running on west campus.

So we muscled through what became known as the University Neighborhood Overlay, increasing heights from 35 feet to 220 feet in certain spots, all as an opt-in provision, that is, the developers have to opt in and accept all of our standards to get that height and density. They have to meet commercial design standards. They have to have wide sidewalks that are well lit at night. They have to have shade trees. They have to have commercial space on the first floor of all the residential buildings, employment opportunities for the kids who live there. My goal is to get 10,000 UT students living adjacent to campus.

This is west campus looking towards the east. You can see seven projects have already been done. There's a 22-story building almost finished there in the front right. There's a couple still in construction. President Bill Powers, a good friend of mine, has his office is in the old tower on the third or fifth floor maybe, looking to the west. He tells a story that just a few weeks ago his assistant, who apparently has been the assistant of the President's Office for 30-some-odd years, walks up as he's staring out the window to the west at six tower cranes. By the way, 37 projects have been completed, three are under construction and 33 more are in the pipeline to be built.

So Bill is looking out across west campus at the tower cranes. The assistant walks up and she stares out the window, too, and she said, "Oh, Mr. President that must so upset you from this point of view." He stopped, he turned around and he said, "That is the finest thing I have seen yet in Austin." Because he knows thousands of his students will move in, live next to campus and walk to school. Austin is this young, educated, safe, dynamic town. But in the one square mile of west campus, more young women are attacked on those sidewalks at night than the rest of the city combined. So from a tax-based standpoint, from environmental standpoint, from a public safety standpoint, it's far and away the right thing to be doing.

Downtown Austin is a great asset for all of us as Texans. Larry called Congress Avenue the Main Street of Texas earlier and I couldn't agree more. It is a fabulous sort of palette to work with, if you will. It's relatively small; you can get your arms around it at 200 square blocks at the most. There is this unbelievable building at 12th Street on Congress Avenue and, of course, Lady Bird Lake as the other bookend.

But I think it's been sort of miserably underutilized all these years. Ten years ago today, I was chairman of what's called the Downtown Austin Alliance, a group of private property owners downtown that were des-

perately trying to figure out what we could do to kick start and revitalize downtown. Austin had a couple of relatively attractive office buildings built back in the '80s as so many Texas urban centers have. But frankly, not a whole lot else. Seventy-five percent of downtown Austin ten years ago was vacant surface parking lots or one, two-story, often times derelict buildings.

So I decided to use energy policy as a way to spur downtown revitalization. I'm pleased to hear Rafael's technical explanation about some of the dynamics. We own our electric utility. I get to be chairman of the board of Austin Energy, the ninth largest public power utility in the country, about 3,000 megawatts of generation, nuclear, coal, gas, West Texas wind farms, $1.4 billion of annual revenue. It is a nice asset to have and control.

Through energy policy we can drive downtown revitalization. We decided to build a publicly owned, downtown, chilled water district system. It's an old technology. Big campuses have had it forever. We spent $81 million. Of course, the electrical engineers at Austin Energy designed and built the first one and it's ugly as hell. But luckily, they put it right next to the City Hall. The next one I got control over. This is a crummy photograph I took of a gorgeous piece of public art that is a 37,000-ton chilled water district cooling plant; whereby each night we freeze the equivalent of 37,000 tons of ice, store it underground, underneath two parking garages in downtown. We built 37,000 lineal feet of piping throughout downtown.

All the high rises you see in Austin being built right now, the new City Hall, the Convention Center, Convention Center Hilton Hotel and virtually all private-sector development is out of their minds not to tap into this. Not only do we save a typical high rise maybe $5 million in up front capital costs on just the condensing units on the roof, a remarkable reduction in the square footage needed inside the buildings for NEP systems, for storage, for maintenance, the roof doesn't have to be structural to the extent that it has been. That is millions of dollars of up front capital savings for the developers. So they all want to tap into this, right?

We freeze ice at night, mostly from our West Texas wind farms. You probably know that the dynamic in West Texas, generally speaking, is that the wind blows more at night than during the daytime. Off peak when we don't need it. We need it for air conditioning in the middle of the afternoon in Texas. So what we do is we take West Texas renewable energy, freeze 37,000 tons of ice stored under downtown, it melts during the course of the day and we guarantee exactly 42-degree chilled water to all of these customers. So in the afternoon when they turn on their air conditioning, it doesn't even record on our peak load.

We have the capacity now for 20 million square feet in downtown; only about 8 million square feet has even been spoken for. The three tallest buildings in Austin are under construction right now; they're all residential, they're all tapped into this. We could triple the development in downtown Austin and essentially not increase our peak demand for a

generation during the afternoon. A remarkable, positive benefit no matter how you measure it. Three billion dollars in private sector tax base, right where we want it. We already have the infrastructure. You know, the City of Austin's carbon footprint doesn't increase as millions of square feet are air conditioned in the afternoon.

When I was elected in 2000, 500 people lived downtown. Today 5,800 people live downtown. There are 4,000 units under construction downtown right now which will house another 7,000 people. We're going from 500 people to 13,000 people living in the core of our downtown. When that happens, particularly in high rises, water use per capita plummets. Especially with the chilled water system, energy use per capita plummets and vehicle miles traveled per capita all plummet with this style of development.

This was a typical streetscape in downtown Austin in an otherwise relatively attractive, relatively safe, relatively vibrant downtown ten years ago. This is West Second Street. Notice the little old historic, two-story building there on the left. Well, thanks to help from new member Larry Speck, that's the same historic building. That's the world headquarters for Silicon Labs. And, of course, their buildings are all tapped into our chilled water system downtown.

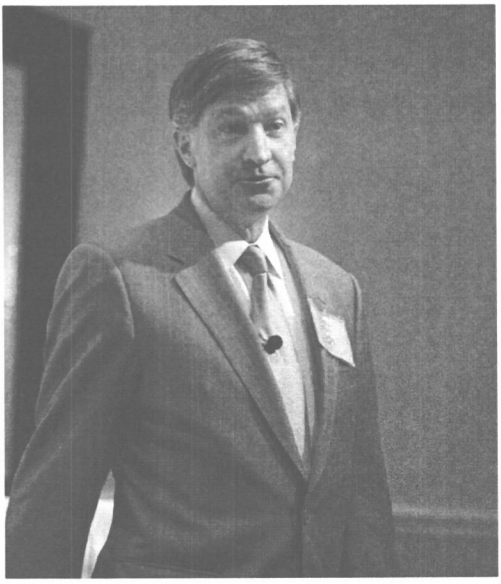
Because of that now, Second Street among several others, we have this dramatic improvement as far as the streetscape. We have 32-foot-wide sidewalk, double row of shade trees, sidewalk cafes. Now as the residents are finally moving in all around it, the dynamics of downtown are really changing.

Here is Cesar Chavez. This is also ten years ago, but it could have been last year. Last week I cut the ribbon on the new 30-foot-wide promenade along Lady Bird Lake. It's just a fabulous piece of streetscape infrastructure that really is driving, I think, additional demand for folks to come into our downtown.

This graphic is about a year old. Half of those buildings have now been built and two or three others are under construction. Every single one of those buildings that are highlighted is tapped into our downtown chilled water loop system. It's just a remarkable vibrancy in a swath of downtown that virtually was no man's land five or ten years ago.

I should have a different graphic to highlight this. I used to tell people ten years ago they could drive around downtown Austin and the worst real estate they saw was probably own by taxpayers. All the stuff along the river, a 1920-era water treatment plant, an old electric generation plant, two or three vacant blocks of land downtown, we owned as a city.

Now we have virtually every one of those blocks back in the hands of the private sector, hundreds of millions of dollars of tax base built on land, some of which was done for long-term leases, some of which we sold for dramatic capital gains that we're doing other good stuff with. So here are three or four of the new ones that have been built. Fifteen tower cranes are still up in downtown Austin right now, six or so in west campus.



Member and speaker Will Wynn, Mayor of Austin. Photo by member John Gullett.

So the three big projects: The Mueller redevelopment of our old airport, what we're doing downtown and then what's happening on west campus. Bergstrom, our new airport, has room for a second terminal—it's going to last us 75 years worth of expansion probably—is six miles from our CBD. Our CBD, of course, is adjacent to the State Capitol complex. Capital of a state of 25 million people is adjacent to the University of Texas, the largest single urban academic node in North America. Two miles from there to Mueller, our city within a city.

Any five-year-old could play connect the dots and with 11 miles are these five major, major urban activity centers. Ten miles of rail could connect our airport to our CBD, one of the fastest revitalizing CBDs in the country, to a State Capitol complex that's going to continue to grow, to UT, to what's happening at west campus and to Mueller. By the way, the route actually goes along Riverside Drive and picks up the 15,000 students that are there now.

Here's East Riverside Drive where all those students live. It's halfway between Austin's new airport and a vibrant downtown. It's horrific today, but what it really should be is an urban, passenger rail served, core transit corridor with remarkable upside. What can happen on this six linear miles between our airport and downtown dwarfs the positive change they've done at Mueller, west campus and downtown. This could be just a remarkable asset at a time when mobility is clearly Austin's Achilles' heel. For us not to take advantage of ten miles of rail and connect the five most dramatic urban centers in central Texas would be a sin. Hopefully, our next big set of initiatives will be urban passenger rail for Austin.

I'll close with that, a photograph of our new award-winning City Hall, Gold LEED certified. Luckily, you can't see the chilled water behind it. It's just a reminder that public policy matters and architecture matters because what it does, it sets the tone, the underpinnings, good urban planning that then allows for the design community to deliver on the architecture that we all as Texans should demand. Thank you all very much, it's been an honor to be here with you.

Discussion:

DR. FLOWERS: If I could ask the panel to stay, we have about ten minutes of conversation here and questions from our philosopher audience. I have a question, which is what is being done in terms of the whole Texas Triangle, that whole mega-region that we've seen so much about. What are we doing together in that corridor, in that triangle?

DEAN STEINER: I think the answer is probably not much at this point. It may be that what I described as a national initiative. Interesting that there are now very serious discussions; John Kerry and Arlen Specter filed legislation a few weeks ago to really jump start the national high-speed rail network. And who knows? Maybe there will be an opportunity to come back to that here in the Texas Triangle.

You know, it's interesting that most of the big cities in the Texas Triangle now have an urban transit system underway. And why not jump start something in San Antonio, as well? You could imagine a network of high-speed rail connected with regional rail and streetcar systems in every one of the cities in the Texas Triangle. Houston, of course, is already moving ahead with a five-line network. Dallas is doing similarly and so forth. So you could imagine this creating the kind of infrastructure that would support the compact pedestrian and transit-friendly sustainable places that everybody has been talking about today. That's the vision. There hasn't been a lot of action and there needs to be soon.

MR. COSTA: Let me answer from the lectern so you can see me. And I can duck behind it if you don't like my answer. I think we have the building blocks of an approach to the mega-region in the form of regional visioning initiatives that are under way in three of our metropolitan areas. In fact, the first one was launched in Austin. Fritz Steiner has chaired Envision Central Texas, which has done a remarkable job in building consensus, finding common ground about what's truly special about that region of our state, what's worth preserving, what's worth creating for the future.

We've done similar things in the Dallas/Fort Worth area. We call it Vision North Texas. We've been underway for four years now. It came about because of major real estate investors.

I'm glad Marilyn Taylor's here because it was the Urban Land Institute, ULI, that came forward with the North Texas District Council and said, unless you folks in the public sector get your act together and do something about traffic congestion and air pollution and water shortages and other problems that are facing us we're not going to be able to develop real estate in the region.

And so ULI and the Council of Governments and U.T. Arlington, private, public educational sectors got together and said, we're going to work together to build consensus about what kind of region we want so that

we can begin to make coordinated decisions to achieve that vision. We're doing exactly that.

In fact, next Tuesday in Arlington we have our North Texas Regional Summit bringing together public officials, developers, engaged citizens to talk about a preferred future. And the one conclusion we've drawn so far is that business as usual, suburban sprawl is not going to be sustainable, is not going to be acceptable for the future. So that's what we're doing in North Texas.

And even in Houston we have Envision Houston Region. I had a chance to represent ULI on a panel there earlier this year. The folks in Houston are moving in that direction. They don't want zoning, but they want better long-term planning. And you can have better long-term planning evening without zoning ordinances. Those are the building blocks, I think, for doing something for the Texas mega-region.

MAYOR WYNN: Well, I'd say, also Betty Sue, it's really hard politically. It's just that governance in Texas is so damn fragmented. Just in the Austin area there are 20 municipalities that I try to deal with and we try to work together as an NPO and it's really, really tough. I think the fractured structure, makes the logistics virtually impossible from the bottom up. It's going to have to be a state-driven set of issues for the Senate and the House to take up for us.

AUDIENCE: The rest of the world, particularly China, but also in Europe and Japan and Korea, the rest of the world is moving ahead with very bold investment and urban development strategies for mega-regions. We're going to get run over by the Chinese and we are being run over by the Chinese economically. They're moving ahead with hundreds of billions of dollars being invested in the systems that we're chatting about here. They're just moving ahead with it. They've got the same problems with provinces that don't like each other and so forth. They've done a really good job of moving beyond ideology and dogma towards common sense, moving beyond political divisions to make the investments. We're not doing it and I think this is one that we ignore at our own risk.

DR. FLOWERS: There is a Chinese character that says crisis and opportunity. And in crisis, which we certainly have now, perhaps there is an opportunity finally at last to come together for the future.

AUDIENCE: I'm Mark McLaughlin from San Angelo. One of the greatest disappointments in my life is the failure of the United States to properly develop the safe use of atomic energy. And we talk about pollution and carbon pollution, et cetera, which we all recognize needs to be lessened.

But in talking about green energy out in West Texas, I see the wind towers, forget the vision pollution with the erection of these towers plus the difficulty of moving electricity into the grid which causes the construc-

tion or, currently, lack of construction of transmission lines. What can cities do about the safe development of atomic plants near our cities? Are we being discouraged or encouraged or is that a viable solution? I know about France, for instance, which has a multitude of small nuclear generators which are close to a site of the use of the electricity. They do very well. Why can't our cities encourage that?

MAYOR WYNN: Well, I'll just say it's not a city issue. It's a utility issue and then a regulatory issue. Austin and San Antonio, of course, own utilities, so we have that potential for policy input. Nuclear power is going to have to be part of a complicated solution. Arguably, it generates no greenhouse gas emissions. Austin Energy's fuel mix is less than two-thirds carbon based now in part because we're 24 percent nuclear and maybe 11 percent renewables, mostly West Texas wind.

We still have the policy prerogative, opportunity, I guess. There's a potential expansion of the South Texas nuclear plant in Matagorda County. We're just a minority interest holder in it. But we have to have the come-to-Jesus discussion in Austin about if we're going to meet our targets.

We have very aggressive targets on reducing overall greenhouse gas emissions, both operationally and as a metro-economy. Right now wind, as attractive as it can be, as fun as it is to talk about solar, they're not dispatchable. Sometimes the wind doesn't blow and sometimes the sun doesn't shine. Our economy has to have power when it's needed. And until we can figure out how to dispatch renewable energy we have to look at other sources of base load.

AUDIENCE: My name is Lloyd Lochridge. And I'm a citizen of Austin. My luck there has been very great over the years because I was born there and had the good fortune to return there from time to time after young and helpless, my father left the newspaper world and went in the oil business which took us East where I was for some of the days when I was trying to grow up, which I'm still trying to do.

But I have a kind of long look at history now, having survived these years. And I can remember as a boy when we lived in the East the terrible depression. And I can remember grown men who could not find jobs, who had had jobs, who wanted to work. Actually, I can remember them selling apples in the streets of New York. And that was a terrible time in our history.

I don't like to think that we're about to have another time like that. And I think that what we have today is we're going to have a new administration. And Lord knows that no matter whether you were for him or against him, the president-elect is certainly in high gear putting together an organization that will do the best it can to have a recovery plan. And I know we all wish that effort well.

But what's occurring to me is that this great symposium that we've had

here now in which the architects have a vision, they have many visions for what might be done about the environment. I've heard things from the Honorable Will Wynn, Mayor of Austin, about what's going on in our own city that I'm afraid I didn't even know or realize. But we may have an opportunity here in our country to have some of these ideas that have been coming out of this conference put into effect. Some of us can remember the days of the WPA projects and the great courthouses and public buildings that were built. What's occurring to me is that we may have an opportunity under our severe circumstances now on a national level and a state level to implement some of these good ideas that you all have been presenting here.

I would just like to know if any of you there on the panel or in the audience would share your ideas about whether there's a way that that kind of good can come out of our current situation. So I think that's really my question for you all.

DR. FLOWERS: I think that is a great question for our general discussion tomorrow morning and a wise philosophical note on which to end this day. Please join me in thanking all the panelists who helped us out today.

Summary and Membership Discussion

Boone Powell, *Moderator*,
Marilyn Taylor, Frederick Steiner, Rafael Pelli,
and Robert D. Yaro

Mr. Powell: We've gathered some really wonderful speakers here at the annual meeting, and I think we've got some of the top ones with us today to share their thoughts with you. I want to first talk about the things that I thought were very prescient. I then want to ask each member of our panel to speak for a few minutes about their thoughts about the conference, what interested them most and what they think are the most important elements. Then, of course, we'll take your questions and your thoughts and ideas after that.

I was especially struck by the notion that the projected growth through 2050 will be the equivalent of a one-million-population city every week. Sometimes it's useful to think about things like that to get a true idea of what the magnitude is. It's very hard to toss around the concept of billions of people and have any clear image of it, but I thought that was a very interesting point.

I think the growth within the Texas Triangle, which became a central topic yesterday, has all those aspects to it too. It's going to be growing, according to Steve Murdock, very rapidly, with much of that coming from the growth within the Hispanic population.

We should be thinking about urban sprawl and other things of increasing concern because of their implications, financial and environmental and otherwise. I was heartened by the notion of Hispanic growth and the Texas Triangle from the sense that the networking of Hispanic communities and neighborhoods is quite different than it is among Anglos and blacks and others. Perhaps a new pattern of growth for Texas can be encouraged. Hispanics typically don't move until they're pushed out because of some physical reason. Anglos and others get pulled out and move elsewhere more by attraction. That says to me that neighborhoods are crucial to family stability. I thought that was thought provoking and important.

A cyclical urban economy, the cradle to cradle idea that materials shouldn't be wasted, that everything is reused, is a powerful idea and I hope we get some comment on that. The humanization of the landscape

is a theme that I've long been interested in. For example, in 18th and 19th century England, humanists were looking for a counterpart to the brutal industrialization of England. I think this is relevant today because it seems to me that we must find some mid-point in developing the land that is growing increasingly dense and yet we need to preserve something of beauty. As discussed yesterday, looking through the merely beautiful at the sublime provides inspiration.

I think we need a few more architectural junkies, "pushers," as Larry Speck described himself. It's going to take people speaking up. Ted Flato said that architecture needs to suit its place, that great architecture comes from the place, and that's where the individuality of the regional strength comes from. If you go from one little town in Italy to another, you find they're quite different. They respond to their own sort of character, their own sort of land, and that's what makes them, I think, partly, so wonderful.

And finally, what are we going to do about regulation, or is it going to be regulation? Are we going to do it through taxation? Are we going to cap carbon emissions and then trade them? I think that is another important theme.

Rafael Pelli has to leave shortly, so I want to call on him first to get started.

MR. PELLI: Thank you, Boone. He mentioned at breakfast this morning he'd like me to think about what kinds of regulatory, policy or other kinds of strategies can be employed to make many of these issues we've talked about more commonplace and to look more seriously at the impact of buildings on the environment. I think about these things a lot. I don't really know an exact answer. I've had experience with different policy initiatives at the state level, at institutional levels. Sometimes you just have an enlightened donor.

But as I stand back from the impact of the individual building and I look at it more broadly, there's probably about four or five areas of research and implementation that I think are equally important. One of them really is—I'm going to let Bob and Marilyn talk more about it—the issue of density. The biggest correlation is between energy use and where you live. If you look at a BTU-per-square-foot calculation, and I don't remember the statistics offhand, but they're quite startling, the BTU-per-square-foot of a person who lives in New York or Chicago and walks to work or takes the subway to work versus the BTU-per-square-foot of someone who lives out in suburban Los Angeles is less than a third. It's a dramatic difference and the opportunity as we look at increasing population and development is as much about land-use planning and issues of urban infrastructure as it is about anything we do at the individual building level. I think that looking at new regulatory initiatives that will be coming soon under this new administration are a possibility for really promoting density through mass transportation and energy infrastructure.

I lived in Los Angeles and when they proposed the subways, it was pretty roundly ridiculed because these lines were going through areas which were very sparsely occupied. Really, it missed the point. What's been startling is to see in a short period of time, the patterns of growth around those lines. What mass transportation does is it sets the blueprint for future growth; we can create a denser typical living environment. It would have a bigger impact than anything else we do at the individual building level.

When we talk about energy in buildings, we mean electricity. When we are talking about electricity, we mean coal. Oil is transportation and industrial production. Reducing energy use in buildings is really about reducing the number of coal-fired plants and trying to increase the use of renewables. But there are some different issues relative to coal and oil which, when we talk about energy independence, I think we sometimes overly simplify. The denser development actually addresses both of those issues because it addresses the oil issues keenly related to transportation and the electrical issues keenly developed to urban living and getting used to living in a slightly smaller unit.

The second thing I was going to say is we have to tackle the issue of existing buildings. This is huge. Primarily in existing buildings and all that we will be renovating them; we will be building a lot of new buildings. Setting up a series of systems by which we tackle the existing buildings is critical. The United Kingdom's actually going through some really aggressive programs of demanding energy audits and refurbishment programs.

One useful thing that could be done at the federal level is to set up a financing program to allow for performance contracting where there are loans made to older buildings for retrofit and renovation targeted specifically for energy. I think the Mayors' conference has already brought it up, it's been an idea that's been proposed; it simply hasn't been implemented yet. But that would have a big impact on overall energy use.

Many of the things I talked about are becoming evolving standards. I think some of the issues, like water, are going to be much more of a regional issue. I think energy is the one that really needs to be tackled at a national level. There exist national standards, but energy codes are still on a state-by-state basis. It's rather an opaque number and understanding. When you talk about cars, you talk about miles per gallon and having a similarly simple way of understanding energy use is very important. It's a useful way to quickly summarize the relative merits of various strategies. That's why I've been talking more about energy intensity numbers. If we have clear standards and we can see clear targets for improvement, you can use energy intensity number as a performance measure by which you have to attain that metric in order to get your building permit.

In Germany you have to go with energy analysis in order to get a building permit. If we said you've got to meet a 30K-BTU-per-square-foot number in order to get your building permit, you'd find a revolution in the way people tackled energy issues. But I think it will have to be made

simple and there has to be a way that we can understand it more clearly than through the current mechanisms.

At a broader level there needs to be better funding for research into building physics and building technology. Right now building technology is not seen as a legitimate sort of public research. The European Union actually funds building technology through a number a universities. I'm citing the work of Vivian Loftness at Carnegie Mellon who is probably one of the leading academics in this country dealing with building physics and with building technology. The NSF, the National Science Foundation, doesn't recognize building technology as a legitimate science research project. If we really want to tackle energy, building technology research has got to be something very strongly supported. It can't just come out of the private sector.

At an academic level, through the universities, I think there's a real challenge to try to incorporate sustainable design. Dean Steiner's dealing with these issues a lot; all the universities are. But there is a more integrated way of teaching which is more common in Europe, which really teaches ideas of building physics and integrates architecture and engineering much more completely in the educational system. I think that's an interesting model to look at, how you let architects understand the consequences of their formal decisions. You can't get a complete technical education in school. Three years is actually a very short period of time. I'm 52 now and I'm just starting to get it and I'm just starting to know what questions to ask my engineers. So in the three years of college or graduate school you can only get so far. I think that in the educational system there could be a more integrated way of learning that teaches ideas about building physics more along the German model.

Certainly if you believe, as I do, that climate change is real, and I don't think there's any dispute in the scientific community that it's real, it needs to be addressed. I'm on a climate change committee in New York City looking at how the building codes should be rewritten to respond to the issues that are going to come up over the next 50 years and looking at the range of change. It's not a question of whether there's going to be change; it's a question of how much change and how should the buildings in New York be built differently to reflect the different climate.

I would close by saying that, I think, as we look forward there are a lot of issues that need to be looked at, but I am encouraged by the rate of change over the last ten years. It really has gone from a very minor issue on very few people's agenda to something that's being discussed much more broadly, much more robustly. The building industry at large has really responded to this and has made this a big part of their agenda. Thank you.

MR. POWELL: Do we have any questions for Rafael?

AUDIENCE: Rafael, I'm Sally Kleberg and I have a question because I do

live in New York and I'm aware of the environment up there and a lot of the building issues. We look at New Jersey where it's flooding because they've paved over all their wetlands and things like that. I know energy is a big issue in getting people to and from work and air pollution, water pollution are affected by it. What about the impact on the landscape itself, like your wetlands, using permeable materials? Is that going to be regulated as well for people to pay attention because that is our cleaning system for the air and the water?

MR. PELLI: It is going to have to be regulated more than it has been. I think part of it is science has only recently gotten to the point where we're starting to understand it better, understanding that the impacts of these larger-scale systems is sometimes kind of a slow process. I think that's largely achieved through land-use planning, and again, thinking big picture about using a denser kind of land-use planning set of strategies and not occupying every square of available land that's out there to develop.

AUDIENCE: I'm Doug Bartlett from Fort Davis. First note, let's add our thanks, Boone. We thanked you and the staff, but we need to thank your team of rivals who made this program really great. Thank all of you, real expertise.

Rafael, we talked last night just briefly about your academic background and you said you went to Yale for one of your degrees and yet didn't have any interaction with one of the finest environmental schools on the face of the earth, Yale School of Forestry and Environment. That leaves me to jump on your integrated idea because I really think there's great merit in considering integrating architecture with environmental education programs at the universities.

I'll make a specific recommendation for you and I can help you implement it if you're interested.

There's something called the Council of Environmental Deans and Directors and about 200 major U.S. universities are involved. If we were to put this proposal in front of them, schools of architecture and professors of architecture, maybe something specific could be done. Because if every new architect between now and 2050 has a sense of the environmental impact of what she or he does and communicates that sense to the individual household, homeowner or major corporation, we may make a path for architectural ethics for the future.

MR. PELLI: I agree. I'd actually be curious to hear Dean Steiner talk a little about what is really going on. He's much closer to that.

DEAN STEINER: In fact, one thing I wanted to do because you've only got ten more minutes is to see if our panelists here have a thought or a question for you.

DEAN TAYLOR: Actually, I was just going to say something to the gentleman who just spoke. At this moment the Yale School of Architecture and FES, the Forestry Environment Sciences, do have some courses that their students are taking at the other school. Our firm is currently trying to finish construction of the new environment that the Michael Hopkins Building is sitting in at Science Hill. I can tell you that there are a couple of classes that I have attended and given talks in that have architecture students up at FES. So it's happening, but it's on the students individually, not as a departmental effort. But it's there for those who seek it out. Fritz, do you want to say anything before Rafael takes over again?

DEAN STEINER: This is one of those...where to start? I wasn't allowed to take Laurie's drawing class when I was a graduate student at Penn.

MR. OLIN: And he was in our department.

DEAN STEINER: Before entering the Department of Landscape Architecture and Regional Planning at Penn, I had a strong art background, and Laurie's colleague and my mentor and eventual friend, Ian McHarg, who, of course, was a pioneer in ecological design, required that I take an advance ecology course instead of Laurie's drawing class. Laurie's students would draw outside and I would walk by wanting to be part of Laurie's class. Sometimes, I'd sit there and draw a little bit on the way over to the Lou Kahn designed Richards Medical Research Laboratory, which was a horrible building to take a class in and is where I took advanced ecology. I would be in this dreary, hot classroom and there would always be architecture students outside taking pictures of the famous Lou Kahn building. While I learned more ecology, I also learned there was a big gap between architectural aesthetics and building performance.

A huge topic and one of the basic challenges we face in schools of architecture is addressing pertinent and important challenges without the research infrastructure to support what we're doing. Just two quick anecdotes. First, we compete in something called the Solar Decathlon, sponsored by the Department of Energy. Essentially, schools of architecture and engineering build houses demonstrating state-of-the-art solar technology. We built a solar house on the mall in Washington, D.C., which is open to the public for two and a half weeks. I convinced my university president the impact of the Solar Decathlon has. There are as many people on the mall at the Solar Decathlon daily as would attend a Longhorn football game, but the event continues for two and a half weeks. So the impact is equivalent to 18 Longhorn games. For each Solar Decathlon, we have to raise about a half million dollars, which is a sizable amount of money.

We've done reasonably well in the competition, but we were trounced last year by a team from Darmstadt, Germany. While we spent a half-million dollars, they spent two and a half million dollars on their house, much coming from the German federal and state governments; five times

more than us. The Germans are investing in these things and we're not. We're not going to compete in the next Solar Decathlon because we've got a capital campaign, and I have to choose between raising money for the decathlon or scholarships. I'm going to raise money for scholarships and sit the next decathlon out because of the fund-raising challenges.

On a more positive note, there have been several references to LEED that the U.S. Green Building Council has developed. LEED was modeled after Austin's Green Building Program. My faculty and our graduates were involved in developing the Austin program, and we are currently involved in a related effort with the Lady Bird Johnson Wildflower Center and others.

We're working with the U.S. Green Building Council, the American Society of Landscape Architects, the U.S. Botanic Garden, and others on the sustainable sites initiative, called SITES (www.sustainablesites.org). Our goal is to develop the landscape equivalent to the LEED standard, LEED for the outdoors. While we're working in the field of green building and landscape design, I think a real fundamental challenge is the lack of research funding which would enable schools of architecture to advance our knowledge further.

I would just point out that Texas Congressman McCall sponsored some really good legislation supporting green building research about a year ago. It was before the 2007 elections. It passed the House quite handily but never got any traction in the Senate. The bill would have provided funding for schools of architecture to work with schools of engineering in green building research.

One other footnote: of the last eight hires I've made, four have been from Germany because they understand building systems. And, it isn't because of my name. It's because people in Munich and Berlin are doing the integrated work that Rafael mentioned.

DEAN TAYLOR: I wanted to underscore the issue about the need for research funds and then make a comment on an integrated design. We have at Penn something called the T.C. Chan Center which is a very advanced, very sophisticated center; a group of people who are engaging in parametric design which means the evaluation of the kind of parameters and inputs and outputs that Rafael was talking about. It is funded a little bit by us, University of Pennsylvania, but primarily by the Chinese Government and the Qatar government. The really extraordinary work we're doing is going back to those places in the form of products and results that they are receiving in return. I think that the commitment to fund the kind of research we're talking about is really missing at the level of our government. I think that we all need to work together to try to make that happen.

Good things are happening at schools. Somebody at Carnegie Mellon, a couple of folks at Yale, clusters of people at Penn, but by and large they don't even have a means to talk to each other with any degree of regularity. So there's a lot that could be done and they're many incredibly talented

people coming up with these sophisticated models that I barely understand, but can actually produce the kind of analysis that we're looking for.

Secondly, on the point on integrated design, I think if you define it in the broadest way is what we're really looking about here. It's not just buildings in the landscape; it's also infrastructure and landscape. Airports, for example, are huge land areas, 10,000 to 12,000 acres of land that sits mostly as void space. They could function as sophisticated water cleansing zones. They could function certainly as detention and retention areas. There could be many things that are added to an airport.

Maybe we could design water and transport and energy and communications all together and, therefore, these investments that we are making would be investments in many directions. That isn't going to happen as long as there's a state Department of Transportation and an Energy Office and the Department of Sanitation all operating their own separate kingdoms. It requires very significant change. But I firmly believe the benefits are there.

We're fortunate at Penn. In our graduate programs, more than 20 percent of the students take a second degree or certificate in one of the design fields. I truly believe they come out thinking in a more integrated fashion as a result of the efforts that my two colleagues sitting here at the table have been making. But we need a much more thorough commitment to tear down the walls between the disciplines and to work together if we're going to solve this problem at any scale.

AUDIENCE: Let me just comment on a couple of themes. I want to come back to a broader one, but one of them is the term "under investment," which has been used with regard to virtually every issue that we've talking about here. Under investment and research, Steve Murdoch's presentation about demographics, and the fact that the next generation of Texans will not have the skills, will not have the education, will not have the ability to make it into the mainstream of this society or this economy unless we invest in all of these things, but in K through 12 education, higher education.

I mentioned to Fritz earlier before we started that every few years somebody comes out with a global survey of research universities and the *Times London* came out with a new one about a month ago. When these things first started coming out, 20 or 30 years ago, the big public universities in the Midwest and the Cal system owned the top ten. In the recent *Times London* survey, not a single public university in the United States appeared in the top 25 or 30. But we were very pleased to see that not only were eight out of the 20 in the Northeast, but they were all the Ivys: Penn and Harvard and Yale, and so forth.

So under investing in research, under investing in education, under investing in infrastructure, I guess it goes back to the beginning of the Reagan revolution with this notion that we could basically have an economy where everything was about consumption and none of it was about

production. Everything was about private consumption and the public sector be damned. We've denigrated public service; we've denigrated public spending. And some of it's been deserved.

Obviously, we've had boondoggles in federal and state programs and so forth, but I think the consistent theme here is we have to transform Texas cities, the Texas Triangle, Texas, and the country if we're going to compete globally; if we're going to make the changes that are going to be necessary to create this new civilization. It's not just Texas that's seeing the kind of demographic changes that Steve was talking about yesterday. It's the whole country. And so if we're going to compete, we're going to adapt to the changes in climate and energy systems; we're going to have to invest.

MR. PELLI: Now, I'm going to leave you with that. I think there is the need to invest from a federal standpoint right now. I think the recognition money needs to get somehow pumped into the economy and there's also recognition about some of these issues we've been talking about. I'll be very curious to see what happens over these next months. Some of these issues are being thought about and talked about and being already put into policy action right now.

So I have hope and I'll be curious to see where we are next year at this time when you all gather to see what's happened to respond to a lot of these issues. Thank you, I've really enjoyed my time here with all of you, a very good group of listeners. I was asked a lot of tough questions last night, which I always appreciate. It made it interesting for me. And I wish you all the best. Thank you.

MR. POWELL: Let me ask our panelists if they have more to say, sort of as an outgrowth of the conference, before we turn to your questions.

MR. OLIN: Just one other thought. You know I'm a regional planner and I really do believe that a lot of the changes that we're talking about here have to be accomplished on the regional scale; that we really have to be thinking about transforming each of the big cities across the state and the Texas Triangle. It's pretty extraordinary that I started in Georgetown, which is 20 miles north of Austin, and my whole trip here the slurb never stopped. It just is a continuing band of what Ian McCard called "a cancerous excrescence on the earth," I think was his Scottish translation. Just 120 miles of crud. The good news is it's all throw-away crud. It's all designed to be written off in 20 years. It's good news is in the Tax Code; bad news is it's bad for the environment, but I'm of the mind that we could accommodate all of the growth that's forecast for the Texas Triangle in already urbanized areas.

The key to dealing with climate and energy and the social changes that we're talking about, the key to creating the kinds of communities that Marilyn talked about yesterday is designing them around transit and side-

walks and shoe leather and a quality public realm. It's about density; it's about infilling and redeveloping. And the great news is that every one of these cities have been built out at lower densities than just about any other place on earth, except for maybe Atlanta. They have that consistent with other parts of the South. It's interesting. You go to Phoenix or you go to LA and they're quite dense because there's no water. It's all driven by the water systems. At any rate, the bad news is that we've been just ravishing, destroying vast areas of this wonderful place for at least a century, at least since the Second World War.

The good news is that we know how to fix them, and you heard about it, they're kind of happy accidents and models for how to do things. Now we need to regularize those things. We know how to build cities that work, cities and suburbs that people want to live in and that the marketplace wants to build. There seems to be more and more public support for this thing and now we've got to take the steps. And I think in the end it is about regional planning; it's about incentives and so forth, but it's also about creating good regional plans. There have been regional visioning exercises in four out of the five cities in the Texas Triangle. I met with, or had a conversation with, a young woman from the mayor's office here in San Antonio; San Antonio's about to create one.

We have a process for building public consensus about creating higher density, more compact, more energy efficient, climate efficient places and so forth. Now, we have to develop the political will to take these models and to take this technology and make it happen. It's really about political will. Some of it, of course, is about convincing the rest of Texas that this is a good idea, which obviously hasn't quite happened yet.

AUDIENCE: I hope we're going to come back to political will in response to the question that came up at the end of the day yesterday. Just a couple of comments about that. Why do we get the commercial corridors everywhere? Why do we get the sprawl from Austin to San Antonio? It's because land is cheap. We think of land as cheap. We think of developing as inexpensive and we've created a drive to qualify society so that low-cost housing is pushed to the perimeter and inevitably almost along big interstates with access that gets people to their place of employment. And I would say that what we're talking about here today, and if you'd had a little more time yesterday too, we would have heard about it with regard to water.

We have to start thinking about the real costs, not just the land costs but the energy costs of serving those places. We have to think about the water costs of serving those places. And access to clean, sufficiently safe-to-drink water is a huge problem in other parts of the world. It could become one in parts of the United States as well. And what if all of a sudden, and this could be either good or it could be terrible, public policy comes in saying communities are no longer led by he who controls the land but rather by he who controls the water, or by the company that controls the energy.

In a sense we have a chance to get ahead of that problem and have these become driving forces for the ways that communities are defined and

built. I want to tie it together with a really great question yesterday which was what keeps architects from having their visions realized? And I've thought a lot about that, and there are a lot of things that we could throw into the conversation, some related to what Laurie said, or what Ted said about architecture expressing its place.

It also expresses values; it expresses the values of the people you're building it for. Oftentimes we have an idea but the client says, you know, I really like your idea; that's a brilliant idea, but the marketplace really wouldn't like that. So I think we need to think of ourselves as leaders in the marketplace. We have to get the message across that we are willing to pay a little more to live in an energy-efficient building, or we are willing as a larger public to subsidize things so that they can be less energy-consuming. We have to articulate our preferences in the market in order for this to whole process to work. It's public action but it's also our action as the buyers and purchasers of goods and services and even of design, if we want to be successful in changing the way we use our land.

SPEAKER: I didn't talk about my practice yesterday; I talked about something else. But since about 1977 our firm has been involved in urban landscape, doing landscape architecture in the cities because we decided that cities are the problem. And the problem with the American cities is that Americans don't really like cities; they haven't. They've been uncomfortable with living at density for a long time.

It seemed to me the only way we'd ever save any of the agriculture near the cities, the best soils and the land that we all love so much, would be to have great cities that people wanted to live in and raise kids and work in. And the only way we can have great cities is to make them livable. Imagine New York City, Manhattan, without Central Park. It'd be inhabitable.

But with Central Park, it's possible and, in fact, it's highly desirable. The most expensive addresses are around Central Park. Okay. One of the things I've concluded is that Americans still think parks are empty land. They think it's vacant. They don't think it already has a use and is full and is productive and generative, but the interesting truth is parks create value. When we redid Bryant Park in New York City, the property values shot up all around the place. Density increased; it changed that part of Manhattan.

When we did the open spaces at Battery Park City and laid out that whole thing and then began to build those pieces, they created value on a piece of landfill. Admittedly, it was next to Wall Street, but it was cut off by a terrible highway. And who wanted to live in lower Manhattan? There were no schools; there were no grocery stores or anything. So part of the whole thing was to bring the basic things that make life good in a suburb, like open space, greenery, place to step out, exercise, be safe with your kids, go to the grocery, bring all that into the hearts of American cities where they has slowly been disappearing.

I feel that the most important landscaping to be done is right in the heart of cities because that's where you can make a place where people are

with their kids and their dogs and where they want to walk to work. Bob Yaro and I are old buddies and old friends and he's working out on the big picture; I'm working on the tiny picture. But the problem is we need to do this together.

There's a kind of teamwork that our country is terrible at. We really like stars; we like individuals. We like the one off thing. We like the big project that solves one problem instead of two or three at the time. And I think that's part of what Marilyn was getting at and what Bob was getting at a minute ago, that when you solve something you need to solve more than one problem at a time. PennDOT only solves extra lanes of traffic at interchanges. It doesn't really solve urban community and structure, whereas urban transit actually gives you corridors for development, tightens up land use, brings you density, moves people cheaply. And so the systems we're talking about, they all go together.

DEAN STEINER: I had four areas from yesterday that really affected me. The first was the whole demographic discussion and especially how that relates to education. I think Steve did an incredibly good job showing the rise of the Hispanic population and the consequences of that.

There was some data that I was looking at in his charts that I think also merit some analysis and discussion at some point. The white population in Texas isn't declining; it's increasing as well. The African American population by those projections is doing some interesting things too. It's tracking about the same as the white population. The wild card in all those demographics was the Asian population. I was looking at those numbers and they were almost tracking like the Hispanic population. But it's like a little town in Nevada. It grows by 500 people and it has grown by 250 percent. But the Asian population is increasing. Two implications: one, what do we do with education, K-12? My wife teaches science at LBJ—not the LBJ School of Public Affairs but the LBJ High School in east Austin. She's at the other end of the spectrum. The University of Texas is the hardest public university to get into in the state and my school is the hardest school or college to get into in the University.

So I deal with absolutely the best and the brightest academic students in the state and she has reading challenges. I think the take-away from Steve's presentation was the K-12. The other part of the take-away, I think, is research universities. New York has dozens. And you look at California, then you look at Texas with research universities. We have three: two public research universities and one at Rice. Texas is not going to thrive. We have to be able to do that without really screwing up Texas A&M and The University of Texas at Austin. How do we do that? I think that's a tremendous challenge.

Second was the questions that Rafael mentioned that you asked us during the breaks and last night. Judy Zaffirini pointed out that if those are the demographics shouldn't we be talking about Mexican architecture more?

PANELIST: Yes. And I think beyond that we really should be looking at Latin American urbanism and Latin American architecture. And I think there are some hopeful signs in the universities that are doing that. UT San Antonio has done a tremendous job of bringing more, increasing the number of Hispanic architects, just a tremendous job. Texas A&M Prairie View has done a remarkable job with African American training African-American architects. University of Texas at Austin, in the research area with the Latin American Studies, we're number one in that. We can't claim that in football this year but we're still number one in Latin Studies. So I think Senator Zaffirini's point is very good. Understanding, if those are the trends, what is the history and culture of settlement in Latin American becomes extremely important for education.

The third area is the Texas Triangle and I think one of the biggest challenges of the Texas Triangle is we are still governed by a cowboy rule mentality and we're an urban state. And the cities in Texas have incredible powers. Fernando yesterday was showing us extraterritorial jurisdiction and I thought, what does that mean? My God, New York City. If where I grew up in Dayton and Cincinnati, Ohio, had that they would be cities a lot larger than they are now. But the counties are just the weakest entities on earth in Texas. They have no power whatsoever.

I don't think Senator Zaffirini is in the audience at the moment so I can admit this. I helped write a bill last year for the State Highway 130 Corridor. Now, legally I can't testify in favor of it even though I helped draft it. And Senator Watson brought it forward and it was trying to get more land use authority to counties in Texas. And it got just beat up really bad. But we aren't going to be able to control growth along the I-35 Corridor anywhere in the state unless counties have more authority.

Finally, somebody asked and Rafael gave a really extraordinarily interesting answer to, how does the outside community view Texas architecture? And I just want to reiterate what he said and sort of put my own spin on it. First, the icon, the Kimball museums, the other architectural treasures of the state, Texans have invested in incredible architecture, much done by SOM and Philip Johnson and others. But that we know.

The other two things he pointed out is sort of the regional modernism that has developed in Texas largely because of O'Neill Ford's leadership originally carried on by Lake/Flato and Overland and Larry Speck. And there's a real link in that architecture to an authenticity that is Texas. The problem, or the challenge, with that architecture is how we scale it up to larger projects, larger buildings. Certainly the work that Boone and his colleagues are doing over at the Pearl brewery, and others, does that. But it's not quite had that impact yet that I think there are a lot of lessons with the more residential and smaller scale architecture.

And finally, Rafael pointed out Austin and Austin's leadership in the sustainability area and I think maybe a message there is we shouldn't keep all the weirdness in Austin; maybe it's time to unleash some of that weird-

ness because there's a lot of innovation going on there that has transferability to the rest of the state.

AUDIENCE: Yes, just some comments about immigration. I mentioned this to Marilyn and others last night, that Dowell Myers is a University of Southern California demographer who's been questioning some of these demographic trends, and one of them is the rise in Hispanic population is predicated on a continued increase in migration from Mexico and Latin America. He said already in Southern California they're seeing a tailing off of immigration for two reasons: one of them is that the economy is in poor shape, particularly sectors that illegals work in, like construction, and so forth; they are lacking opportunities. The second thing is that we're running out of Mexicans. I know it's a striking thing, but the average Mexican woman of childbearing years according to Dowell in 1970 had 6.8 children; the average Mexican woman of childbearing years now is having 2.2 children. We don't have this incredible increase in population.

Secondly, I'm just fascinated by that presentation. I've heard others like it and I think some people find it shocking or think this is just a fundamental change in American civilization which has always been English-speaking. If you go back a century there was a very similar line of reasoning, the concerns were about eastern and southern European immigration. There were all these Italians and Greeks and Jews and Russians and Poles and so forth who were going to overwhelm the "old stock" Americans. But what happened is that we built urban school systems across the country that allowed generations of immigrants from faraway places to become part of the mainstream society.

That's what we need to do again. We need to make sure that everybody here and everybody that's coming here is pulled into the mainstream of society and into this civilization and into this economy. The key to that is going to be inclusion. We've got to invest in education primarily, but the other services that immigrants need to become part of the mainstream. If we don't do it we're going to end up with a highly polarized society that won't work.

MR. POWELL: I want to add something about what you just said. It's very interesting and it relates to Steve Murdock. When he was here in 2000 at our meeting and talking to us about growth worldwide, he showed us a chart of fertility rates that were inversely proportional to literacy. It would seem that we should be thinking of applying that principle in our projections, but we are not. As Hispanics come into the country and become assimilated and then become literate, their fertility rate is going to fall off. He said it's inexorable; it always happens. We can expect, in fact, that there will be a real question about some current population projections. I think that's very important to consider.

AUDIENCE: But we still have a problem. The folks that are here and the kids that are here, we've got to pull them in.

MR. POWELL: More questions from the audience?

AUDIENCE: Fred Pfieffer. Just a comment on this. I talked with Steve after his presentation. I said, you know your charts were all so clear. What is our President? Is he black or white, the President coming in? What about the greatest golfer in the world, what is he? And then I said, you know, I've got one daughter who's married to a black, I've got another daughter who was married to a Hispanic, and my grandchildren are half and half. There is so much blurring in that really. And he said, well, the Census didn't do that; we're going to be doing that. So those charts really weren't right. What you're saying is the melting pot is going to work but we have to really work on it to work, as far as I'm concerned.

AUDIENCE: While we're setting up, just one of those anecdotal things, my daughter lives in New York and she's dating a Santa Dominican man by way of Dallas. My son lives is San Francisco and he's dating a Chinese-American. I'm not sure either one of them will produce children as a result of those relationships, but I think certainly you're right that these things are blurring a lot.

AUDIENCE: In Southern California I know 40 percent of the marriages are interracial marriages and that number's going way up.

AUDIENCE: My name is Ann Brinkerhoff. I was recently obliged to go to a funeral and this brought up the land use problem there. With increasing population and not everybody choosing cremation, where will we put all these people? I understand that a lot of city people are going out to the small towns and buying plots. But I see this as a problem.

AUDIENCE: What they do in Italy, of course, is they just rent the spaces. You lease them for 50 or 100 years and then by then you're forgotten, so then you're recycled with someone else.

MR. POWELL: That's part of the cradle-to-cradle idea

AUDIENCE: Lonn Taylor. I would like to hear the panel's thoughts on the connections or possible conflict between compactness and density and historic preservation. And I'm provoked to ask this question by the mayor of Austin's description last night of what he called the West Campus which 40 years ago was a neighborhood full of some of the best late nineteenth and early twentieth century dwelling houses in Austin. Now it's all high-rise apartments and parking garages. So my question is what is going to be the role of historic preservation in our cities in the next 40 years?

PANELIST: I think it's got to play a very strong part in all of this. I don't think we need to trade off historic preservation for density. And that's the brilliance of Texas urbanization and urban planning is that we have hundreds of thousands of acres of parking lots and strip malls and all this other stuff, nothing historic about any of it, all of it ripe for redevelopment.

We had some of the slides yesterday from Fort Worth, you know, the simulation of going from the Godforsaken-anywhere-USA crossroads with a parking lot and a gas station and then turning it into six-story apartment buildings and ground floor retail. I mean, that's where the opportunities are and we shouldn't have to trade off historic neighborhoods and districts because those places are the touchstones to the past.

That's a big part of the amenity package that Fritz and Marilyn are talking about that's going to attract people back into cities. We should never have to trade those things off. And it's a reason not to be blowing away those nice bungalow-districts on the west side of Austin.

PANELIST: It's actually interesting to me. We were talking to Mayor Wynn last night about this. And apparently, I may have this wrong, but what I understood from him was in order to save something it takes a super-majority of the council which is six of seven votes. I think it ought to be the opposite. I think to tear it down it ought to be a super-majority. I think that in general the default for the landmarks and the neighborhoods that have retained their value or can regain their value is to save them; they are the same kind of asset that open space is. Exactly what Bob said, it contributes the authenticity but it's a reason we want to live some places. And I think we ought to make it a default proposition to save these things and prove that we need to tear them down, rather than vice versa.

PANELIST: Let me add to what Marilyn just said. From my personal experience in both Seattle and in Philadelphia; two cities that are quite different from each other in many ways. Back in the '70s a group of us fought to save the public market and Pioneer Square in Seattle where the city's fathers were intent on tearing them down to build some new high-rise condominiums and a convention center.

The net result of our success was not only to get the mayor and half of the city council thrown out of office but also to save the Pike Place market and Pioneer Square which then were recycled as buildings to be reused. The market remained as a market. But what's happened is they became magnets for urban development and everybody wanted to be near these nice things that had then gotten saved and had artists and very nice shops move into them. They functioned almost like a park, as Marilyn just said, in terms of providing a thing of quality, a thing of historic memory and experience and also a change of pace and scale, an identify for that city.

The same thing happened in Philadelphia but largely due to tax credits

for historic preservation. Parts of the old city were retained and there was bonuses given to people and tax deferrals for people who took old industrial buildings on the eastern edge of the city, what we call "old city," near Independence Hall. And now, it's full up; you can't get in. The condominiums cost too much. Every time anybody tries to tear anything down there's a huge fight.

But the density has shot way up and on all the little missing teeth and all the vacant parcels in the parking lots high-rise buildings and taller buildings have been going up. And so now there is somewhat of a struggle to keep from having too much density in areas that have become very desirable. Paris is a low-rise, high-density city; so is Philadelphia. And density doesn't just mean Manhattan.

AUDIENCE: Laurie Olin here. There are all kinds of density if you use your head. I went for a walk this morning. I know San Antonio a little and I'm fond of it, but this place is dying of open space. There are parking lots all over the place. There's empty space all over, that's just terrible. There's abandonment and everything right near the core of the city. There's lots of room for development; it doesn't all have to parasite on the river. It doesn't have to sprawl in the countryside either. Very reasonable development could take place here. Millions of square feet could be added to the city without destroying it. And that's true in every American city.

PANELIST: One of the things I would comment on, Laurie, is something I didn't learn until we had a design committee meeting in Paris, but the formula in Paris really is that the people that can live in any given block can support the commercial at the first level. So in a sense it's not all perfectly balanced, of course, but that makes the streets of Paris very alive indeed because the people are there, the shops are there and the equation works.

I think San Antonio has a lot of open space, but one of the wonderful things about San Antonio is that it's almost 300 years old. And one of the wonderful things is that layering of history. And the discussion that Lonn brought up about our history and about making sure we retain it, I think of Steinbeck's *Grapes of Wrath* when the women were in Oklahoma. They were searching through their things and seeing what they could put on the wagon they had, the little truck that they could take to California.

And they were throwing things out that they couldn't take and one woman commented, How will we know it's us without our things? And our things really are our history and the layers of history that make a city interesting, and we don't want to throw those out. And I think we all feel that way. Sometimes we don't exactly accomplish it.

AUDIENCE: Michael Granoff. One of the unintended consequences of making cities livable is that they're often made livable just for the wealthy. New York City, for example, has certainly become much more livable in

the last 20 years than it was when I grew up in New York. But at the same time, unless you work on Wall Street, it's pretty hard to afford an apartment in Manhattan. Even Brooklyn Heights has become gentrified.

In Austin we see the same phenomena. Clarksville used to be affordable. East Austin was traditionally Hispanic and black. Now it's becoming gentrified. So how do you make cities livable and yet livable for those who work in the city such as teachers, policemen and office workers?

PANELIST: I think the answer is we've got to make more livable places. We've got to make enough livable places, we don't have enough gentry to go around. You go to New York, and the great thing that's happened in New York is that neighborhoods that were in terminal decline a generation ago have been rebuilt. The whole area in the South Bronx that was Fort Apache, the Bronx and The Bonfire of the Vanities country and so forth, where it was all vacant lots and so forth, it's all been rebuilt. Those are middle class neighborhoods. Those are not upscale neighborhoods.

New York's added a million residents over the past 15 years. It's on track to add a million more over the next 15 years. Those are not all wealthy people. Neighborhoods all over the city have been reclaimed as working class and middle class neighborhoods. And in part it's about the things that we're talking about here. It's about providing quality, public service, it's really what Mike Bloomberg and before me, Rudy Giuliani were about: public safety, public services, schools, making things work, so that people from every income group want to be in the city. We've had a really interesting process in New York and over the last generation we've had complete turnaround in regional development trends.

Last year for almost the tenth year in a row, we had more housing starts in New York City than we had in all 26 suburban counties in the Tri-State area, going down to Princeton and all the way up to New Haven. It's crazy now but in the last year before the bust started (2006) we had something like 50,000 new housing starts in the five boroughs of New York City, and on Long Island we had about 2,500 housing starts on the entire island.

So people are really voting with their feet to get back into New York and other cities around the country that are dealing with the fundamentals. I like Marilyn's punch list: safe, attractive, quality services, good mobility systems, transit systems and so forth. Do those things and people are going to want to be in cities at every income group.

AUDIENCE: My name is Ellen Temple and I'm from the Piney Woods, 100 miles straight north of Houston in a rural area. We're starting to feel the pressure of urbanization in many ways. We have worked up a green infrastructure plan for Angelina County where I live. And we're working with the conservation fund. In the run up to the bill on infrastructure that will be presented to the President right away, there is a lot of discussion about green infrastructure. How does that parallel what we call gray infrastructure planning?

PANELIST: I think the answer is yes and I think the answer is also that we don't know yet what the details are. It'd be interesting to Senator Bradley's thoughts on how the Congress is going to handle this legislation. I would imagine they're going to have some very general guidelines for the administration to administer, but in terms of defining the categories of projects.

What I said yesterday was that the thing I'm concerned about is that they're going to send the money out to the state DOTs and TxDOT and all the others are going to just do a lot of paving contracts; they're going to be adding extra lanes on urban highways, and so forth. That's a disaster, I think, for the kinds of interests that we're talking about here.

As recently as yesterday's radio address, the President-elect used the term "green infrastructure" and "green jobs," what does that mean? I think that's yet to be defined but it's the kinds of water systems and waste management systems that we've been talking about here that apply in small towns.

I have a friend in western Massachusetts in Ashfield, population 1,200, who built, the sewer board and they built a solar aquatic greenhouse sewage treatment plant for this little village center in the Berkshire Hills. The outcome of this stuff is basically compost that people use in their gardens so that there's no solid waste coming out of it and the water quality is good. We're working with a group of researchers on a technology that would capture carbon or carbon dioxide from power generation and use it as the feed stock for greenhouses that would grow algae that would essentially become biofuels and would also become food, animal feed and that sort of thing.

So there are all these technologies out there that I think are going to be pursued and explored, and so forth. As I understand they're also talking about research and alternative energy technologies that would be funded by the "recovery." It's kind of interesting; they're not using the word "stimulus."

PANELIST: Just a really quick comment. The President-elect was on Meet the Press this morning, while y'all were having your business meeting probably. He said two things right away when they asked what the economic recovery package was going to be. He said, well, we're looking at shovel-ready projects and the governors have a long list of those that they have shared with me. But his next sentence was: we are going to look for those that have long-term value, How much effect we'll be able to have in this short time before the economic recovery package is put in place, I think, is a real question. But watch for the next transportation bill, which will probably come up in about September. Here's a place where we really do have an opportunity to press the case, to talk about green infrastructure, to talk about the creation of green jobs and to do what we are all talking about here which is to try transformation, climate change and land use all together in ways where we can really begin to express a public will that we want to change the form of develop in this country.

PANELIST: If I could add a little bit more to that as well. Often when people see those mega-region drawings that Bob and colleagues have done, one question that comes up, what if I don't live in a mega-region; what if I'm outside of that? And Bob, on his website, has developed a green infrastructure strategy. It's sort of a strategy for those other areas. When I looked at Steve Shelton's presentation I noticed incredible landscapes that exist here in Texas and I look at the Edwards Aquifer and the Hill Country. Any place else in the world that would be a national park.

And you look at New York City's incredible vision to protect its watersheds to ensure good drinking water. And you look at New Jersey, I mean the Pinelands, the amazing effort that the citizens of New Jersey did to protect the Pinelands, mainly because of the water resources that were there. If you're interested in sort of one level of green infrastructure, Bob and I have something there that you might be interested in.

PANELIST: I knew Fritz wouldn't mind my popping up in the middle of friends here but Bob's website which has a lot of these suggestions; I printed out a bunch for you to pick up if you want to go look further into that. It's all right on this chair. Or you can write it down. It's www.america2050.org. And the article that Fritz and I authored about landscape preservation is in there.

AUDIENCE: I'm Lloyd Lochridge again. At the close yesterday I left this good body with something of a question. And coming out of my own experience and what's going on these days. I think I just heard a member of the panel mention this, that in the headline of the morning paper President-elect Obama had made some announcement that he has in mind addressing the problem of unemployment by large expenditures of public works administration. I think the fellow was listening when I was talking here, but I don't know how he did it. And I promise you I've not discussed it with him yet.

MR. PELLI: Lloyd, one of the things that always interested me is if you took an inventory of the places that are memorable in Texas, outside of the natural beauty, you would find one WPA project after another. Most of the powerful things in Texas were created in those ten years and so even though there have been some criticisms that these kinds of projects, WPA projects, don't necessary revive unemployment enough, at least we got something. We got the backbone of the really great things of the state between 1930 and 1940.

PANELIST: And I don't know whether this situation currently is going to be long enough and that is an issue about whether or not those kinds of programs can develop again, but certainly we're much richer for it.

MR. PELLI: There's not a national park in America that doesn't have some of its best facilities built in the period between 1934 and World War II from those programs. Here in San Antonio, the Riverwalk, of course, began as a flood control project by the WPA and then was taken over by the city and continued as a WPA project; the architect's office was right there on the canal basically, on the river.

PANELIST: Well, actually it started as a beautification project. So the San Antonio River, Alamo Stadium, Landa Park, Garner Park, just go around, everything that was built, everything we use today, it was all WPA.

MR. PELLI: I was going to say that there are things other than highways, of course, and one of them has to do with water. And not just piping water but controlling floods and handling storm water, and of course, we're currently working on a big project on the Mill River in Connecticut with the Corps of Engineers and the City of Stamford, which just basically began as a project to reorganize the river so that it would work better, more naturally. And in the course of it, the park part of it that's along is the cheap part. It really is the inexpensive part of the public amenities that come from it.

PANELIST: It just proves that we subvert projects whenever we get a chance to add what we want to add. Right?

MR. PELLI: Exactly.

AUDIENCE: Fred Pfieffer . I've been in public works all of my adult life. Maintainability needs to be part of it whether it's a building you're building or designing, public works project or whenever. Can it be maintained? And that ought to be in that equation and in all the professionals' minds. Can it be maintained? Because I've seen so many things, big money spent on it and all of a sudden, big maintenance problems.

AUDIENCE: My name is Fairfax Randall and I am here listening to so many beautiful bright minds and so stimulated, but I want to put before us, for all of you that are so thoughtful and creative, that we have a serious problem which is Galveston. Galveston has just been devastated. The University of Texas regents are abandoning UTMB. I just want to throw this at us all to see if these great minds and these energetic people might be concerned about what's right in our neighborhood going on right now. And it is very tragic and very serious.

PANELIST: I know a lot about Galveston; I work there a lot. And I think the issue at Galveston, and maybe we don't realize it, but it's much more serious than the New Orleans issue. Fundamentally, it's much more endan-

gered because of the job base. New Orleans is the port, a great refining area. It's located in such a way as the communication point on the whole center of America. It will not die, but Galveston is in dire straits right now.

PANELIST: After Katrina, Bob and I and several others put together a map of hazards along the Gulf Coast and two days before Ike hit I got a call from FEMA asking me if we had any maps they could use to look at what the devastation was going to be. And so we provided the maps. We had done it pro bono and Bob and Barbara Faga and others who put these maps together, we all watched it all happen and it was so accurate it was unbelievable. And we've been working with FEMA since.

The whole Gulf Coast has a relationship between climate change; the warming of the Gulf of Mexico, where hurricanes are going to occur, how we plan for that, is a matter of great importance for Texas and the rest of the southeastern United States.

PANELIST: I have another comment on that and that is that the conclusion of those maps forecasts and increase in the number and severity of Atlantic and Gulf Coast hurricanes and that we're likely to see a lot more damage. By the time we were done, about $120 billion of public money plus when you figure in private insurance, about one-half trillion dollars were spent rebuilding after Katrina.

And what those maps concluded is that virtually everything that was rebuilt outside of New Orleans and a handful of other places that have levies is basically going to get wiped out again next time we have a big storm. And your tax dollars are going to continue to bail these places out. It makes absolutely no sense.

The rest of the world is making some enlightened decisions about where urban development is going to be permitted and where coastlines are going to be armored. It gets back to the other problem in New Orleans; we've rebuilt for a 25-year storm or a 30-year storm, a category 3 hurricane, I guess. The Dutch coast, they're armoring the coast in the settled areas for a 10,000-year storm.

I live in Stamford, Connecticut, where Laurie's working on this project and we're one of three cities in America that has a hurricane barrier. Now, how did that happen? Providence and New Bedford in New England are the other two places. It happened because we had two hurricanes within a generation which flooded the downtown, killed a lot of people, did a lot of damage. That seems to be what it takes.

So maybe what it'll take in Galveston. It's been a century since the last storm; maybe we need to have another one. And we're going to have to make some enlightened decisions about where to armor the coastline, where we want population growth and development to occur, where we're going to continue to bail people out and where we're not going to. And we just haven't been able to do that as a civilization. I suspect that this is one

of the things we're going to have to do. Those maps are also on Bob's web page, by the way.

AUDIENCE: I'm Ramona Davis from Houston and I wanted to go back to the topic of historic preservation which is my field, and how important it is. Just a couple of thoughts: we like to say that the greenest building is the one that's already built when you think about time, labor, transportation, energy, materials and to tear all that down.

The other thought is going to assimilation of immigrants here. The journalist Richard Rodriguez who lives in L.A. spoke in Houston about ten years ago. We invited him to come. He doesn't say that he was illegal with his family but he implies it. He said that the one thing that helped him assimilate into the American culture was going to the movies in a beautiful movie house in Pasadena. That's since been torn down and Safeway replaced it. He wonders how immigrants will assimilate into this culture, into the mainstream, if they don't have the visible symbols of the American dream. The odd thing is those movie houses that attract so many people, so many immigrants who can experience the American dream, were echoes of architecture from other cultures, Egyptians for example, lots of different cultures are built into those movie houses.

But just a thought on assimilation and how important it is to hang on to the culture here because that's why people come here. They want to be part of this culture, and that's the way we bring them in—one way.

PANELIST: I would like to comment on that. About three or four years ago I was in Dallas on a Sunday morning and I turned on the TV on Meet the Press and Laura Bush and Caroline Kennedy were on, kind of an unlikely pair, talking about education and libraries. And they started to talk about the importance of architecture and design of school.

And Laura Bush said that when she was growing up that the school was the cathedral of knowledge and that the school was the most beautiful building in the neighborhood. Again, going back to the investment of education, public education had so much to do with the assimilation that Bob mentioned earlier, but we were investing in those cathedrals of knowledge, those schools, and making them very important.

Laurie and I have been working a lot in China the last couple of years and you go around a Chinese neighborhood and the most important building, the building that has the most public investment, is the school. And it's obvious. I love the movie theaters but I hope we also invest in schools and libraries.

PANELIST: Is Gary Jacobs of Laredo here? This is such a fun group to be a part of. And I guess I'm going to take Rafael's position and say, thank you very much for so generously including all of us. Mr. Jacobs extended our conversation to about eleven o'clock last night via my BlackBerry. And if

he were here I'd ask his permission; if he isn't I guess I just get to say it. He wrote about assimilation in a different way but I think an important way.

The concept of the Texas Triangle really should be expanded to include Monterey, Saltillo, Mexico. This area has a population of approximately five million people, lots of industry. There's a population in the lower Rio Grande of approximately two million on the U.S. side and another million on the Mexican side. Point is, in terms of sustainability, we have to think in terms of geography and economics, not political boundaries. And then he had a great line. He said, Lou Dobbs wants to build walls and we want to assimilate northern Mexico into a sustainable development vision. I thought that was just great and we're sharing. So, thank you.

MR. YARO: Point of information. When you go to the website and look at the map you'll see what we've done is to show what the urban core of it is, which really is the heart of the Texas Triangle, these five cities. But we've indicated with shading the kind of area of economic and political influence in places that need to be included. And the Texas Triangle and the Gulf Coast mega-regions, we've extended them down to Monterey. Go to the Pacific Northwest, the one at Cascadia goes up obviously north of Vancouver, and so forth. That's why I said five of these places including the Texas Triangle and the Gulf Coast extend into Mexico and into Canada.

PANELIST: I think we should thank you very much for stimulating us and making us have to think more carefully than we sometimes do. It's been a pleasure to be here. People have been very warm and friendly but they've also been very provocative and poked at us, which I think is very helpful. Thank you. Boone, thank you for your leadership with this as well. It's been inspirational and you've just been great to work with on this.

MR. POWELL: It was a great pleasure to do this this year. Herding cats is not as difficult as I thought it was. I did survive. Thank you very much for your attention. You've been a wonderful audience.

MEMORIALS

ANNE LEGENDRE ARMSTRONG
1927–2008

I first met Anne Armstrong in 1971 when I was a television news reporter in Houston, and I had the opportunity to interview her just after she had been elected cochair of the Republican National Committee. As a young woman with budding aspirations of my own, I was tremendously impressed with her. I was surprised and delighted when, one week after the interview, she called and asked if I would like to move to Washington, D.C., to be her press secretary at the RNC. I thought about it for a couple of weeks and decided to do it. I learned more in the first six months I worked for her than I could have learned getting an MBA!

Anne readily offered me her guidance and I looked up to her as a mentor and a friend. Throughout my career, I sought her advice when facing major decisions. Indeed, over such a distinguished career in public service she amassed experience, expertise, and wisdom that drew presidents to her for counsel.

Anne started in public service by campaigning door-to-door for Eisenhower, and her hard work and dedication eventually carried her to the center of national politics as the cochair of the Republican National Committee—she was the first woman, Republican or Democrat, to lead a national party. Under her leadership, she worked to make the Republican Party more welcoming to younger voters, ethnic minorities, and women. In 1972, she was the first female keynote speaker at a Republican National Convention. Anne broke yet another glass ceiling when President Gerald Ford appointed her to be the first woman ambassador to the Court of St. James, our country's most coveted diplomatic post. She was immensely popular in Great Britain throughout her term as U.S. Ambassador.

Her characteristic intelligence and warmth made her a trusted advisor to Presidents Nixon and Ford. They were wise enough to entrust Anne, who was the first woman advisor of cabinet rank, with duties that extended beyond what were then considered to be traditional women's responsibilities. President Reagan appointed her to be Chairman of the President's Foreign Intelligence Advisory Board, and President George H.W. Bush sought her advice on matters of foreign intelligence at the height of the Cold War. In multiple administrations, she took on foreign policy, intelligence, and economics with effectiveness and skill, and she helped pave

the way for women who serve at the highest levels of government today.

In 1987, President Ronald Reagan awarded her the Presidential Medal of Freedom, our nation's highest civilian honor.

Anne served her country because she loved it—but she always knew that Texas was her home. She was a Phi Beta Kappa graduate of Vassar College when she met her future husband , and she was swept off her feet instantly. She and Tobin Armstrong, her beloved partner of 55 years, were happiest on their remote 50,000 acre ranch in South Texas. There, they raised their five children and watched their legacy grow to include 13 grandchildren.

I had the opportunity to interview Anne again a few years ago as I was writing my book, *American Heroines*. It would be impossible to write a book about the women who shaped our country without highlighting her achievements and acknowledging the indelible mark she made on my career. During our conversation, she told me about the barriers she had faced as a woman, the support she received from her precious family, the importance of a strong education, and her famous negotiating style, which I described as knowing when to fight and when to switch.

I also asked her to give me her very best advice. Anne said,

> "My mother and father would say, 'Tell the truth and go for the stars,' and what I admire most about Texas A&M in having served as a regent there is its insistence on values: 'Aggies do not lie, cheat, steal, nor tolerate those who do.' They follow the Golden Rule, they work hard, they value close families, and they love their country. That's it."

It's clear that Anne followed her own advice—and in doing so she left such an inspiring example for the rest of us. Anne Armstrong led an extraordinary life and left a remarkable legacy that will be cherished by generations of Texans. I count myself among the many friends who are so much better off for having known and loved her.

K.B.H.

Charles M. Bonjean
1936–2008

Dr. Charles "Chuck" Bonjean, 72, a beloved member of the Department of Sociology at the University of Texas at Austin and retired Executive Director of the Hogg Foundation for Mental Health at UT, died Feb. 20, 2008, in Florida of natural causes. He had moved from Austin to Florida in his last days to be near family.

Bonjean was a noted sociologist, scholar, philanthropist, educator and administrator whose career spanned more than 40 years with The University of Texas at Austin. He also was a talented pianist and jazz devotee who enjoyed playing music with friends.

Bonjean came to UT in 1963 as an assistant professor with the Department of Sociology and spent his entire career there. He was promoted to associate professor in 1966 and to professor in 1970. He was chair of the department from 1972 until 1974, when he was appointed Hogg Professor of Sociology, a position he held until he retired in 2002.

As a sociologist, Bonjean's academic interests encompassed formal organizations, sociology of the community, evaluation research, and mental health. He was a prolific researcher, writer and editor whose name appeared as author, co-author or contributor to more than 65 books, articles, chapters and book reviews. Many of his articles appeared in such prominent journals as the *American Sociological Review*, *American Journal of Sociology*, *Social Forces*, *Urban Affairs Quarterly*, *Sex Roles*, the *Journal of Applied Behavioral Sciences*, *Sociological Quarterly*, *Work and Occupations*, *Journal of Politics*, *Contemporary Sociology*, and *Sociology of Education*.

Bonjean first joined the American Sociological Association during his graduate student days at the University of North Carolina. He was elected to ASA Council in 1985-88. He served on or chaired two dozen different ASA committees, including the Committee on Nominations, the Executive Office and Budget Committee, the Minority Opportunity Summer Training (MOST) Program Committee, the Council Subcommittee on Relations with Sections, the Council Subcommittee on Program Reorganization, the Council Subcommittee on Sociological Practice, and the Minority Fellowship Committee. Bonjean served terms as chair of the Council Subcommittee on Women and Minorities, as chair of the Committee on Association Reorganization, and as chair of the Career of Distinguished Scholarship Award Selection Committee.

Those who worked with Chuck on the MOST project know how central his humor and enthusiasm for all things Texas was to this work. He created a tradition of giving Task Force members highly personalized tee shirts, he encouraged endless jokes and bantering, and welcomed members on numerous occasions to his home and his boat on Lake Travis outside of Austin. There was nothing he liked better than club-crawling along Austin's infamous 6th Street where he would introduce people to the diverse music of that fun-loving community. Chuck loved sociology, he loved working, he loved music, he loved Texas, and he loved his good times with friends.

Bonjean served as editor of a number of academic and professional journals and publications. He was the editor of *Social Science Quarterly* from 1966 to 1993. When he became the editor, the journal was but a small regional publication known then as the *Southwestern Social Science Quarterly*. In 1968, behind Bonjean's leadership, the journal changed its name and soon became a nationally visible, highly regarded journal. It may have been one of the first social science journals to publish research dealing with Hispanics. As an editor, Chuck was known for his detailed reviews and the help he gave authors to improve their work. And he always promised to send three reviews within six weeks of the date the

manuscript was submitted to *SSQ*. More often than not, he was able to fulfill this promise. He nurtured many young sociologists in his role as editor, colleague, and friend. Along with the journal, Chuck served in many positions of the Southwestern Social Science Association and was its President in 1994–1995. He helped establish the present excellent reputation of the SSSA.

In the early 1970s the UT sociology department was not as large as it is today. Like many university departments at that time, the department had an abundance of assistant professors. Bonjean had just been promoted to full professor in 1970 so was one of the role models in the department for the younger assistant professors. He was always accessible on campus, and also was known for the exciting parties he would throw at his home overlooking Lake Travis.

In addition to his role as an educator, Bonjean joined the Hogg Foundation in 1974 as executive associate and was promoted to vice president in 1979. He served as the foundation's executive director from 1993 until 2002, and was only the third person to hold that position since the foundation's inception in 1940.

Chuck loved to travel and was on the road more than 100 nights each year in connection with his Hogg Foundation and other responsibilities. He traveled the world in his free time and was one of only a handful of "two-million milers" with Delta Airlines.

Bonjean served on boards and committees of numerous national, state and local philanthropic and professional organizations, including the Council on Foundations, Grantmakers in Health, the Center for Nonprofit Organization Management, Grantmakers Evaluation Network, American Sociological Foundation, Southwestern Social Science Association, Conference of Southwest Foundations, Mental Health Association of Texas, Texas Grantmakers in Health and Human Services, Texas Department of Mental Health and Mental Retardation, Mental Health Association of Greater Houston, and the Greater Houston Collaborative for Children.

At the university, Bonjean served on the Faculty Senate, the University Council, the University Public Lectures Committee, the University Research Institute and the Publications Policies Committee. He also was a consultant and advisor to the university's Department of Journalism, School of Nursing and School of Social Work.

His honorary affiliations included Phi Beta Kappa, Omicron Delta Kappa, Kappa Tau Alpha and Sigma Delta Chi. He received numerous awards, including the Sigma Delta Chi Scholarship Award in 1957, The University of Texas Students' Association Teaching Excellence Award in 1965, the Drake University Alumni Distinguished Service Award in 1979, the Association of Junior Leagues' Award for Voluntary Association Organizational Self-Assessment in 1983, and the Southwestern Social Science Association's Outstanding Service Award twice, in 1984 and 1991.

Bonjean received a doctorate in sociology from the University of North Carolina, a master's degree in journalism from the University of North

Carolina, and a bachelor's degree in journalism from Drake University.

If one thing stood out about Chuck above all else, it was his unique ability to make and *remain* friends with everyone he met. He will be missed by the many hundreds of friends he left behind in Texas, the U.S., and the world.

Norval D. Glenn, Sheldon Ekland-Olson,
and E. Mark Warr

Dr. Michael E. DeBakey
1908–2008

Dr. Michael E. DeBakey, internationally recognized as the father of modern cardiovascular surgery, died at the Methodist Hospital, Houston on July 11, 2008. He was 99.

DeBakey was the eldest of five children born to Lebanese immigrants Raheehja and Shaker Morris DeBakey. His father was a businessman and pharmacist in Lake Charles who invested in real estate and rice farms. He grew up in comfortable circumstances with his brother and three sisters eating healthy foods—fresh vegetables, fresh fruit, seafood, rice and beans. They did not smoke or drink. On Sundays after church services, the DeBakeys sometimes took clothing to a nearby orphanage. One time the giveaway bundle included DeBakey's favorite cap. When he protested, his mother said: "You have lots of caps, these children have none." DeBakey later said "It made a great impression on me."

His mother also taught him one of his future career's essential skills—sewing. Years later, in the 1950's, DeBakey sewed a prototype artificial artery on his wife's sewing machine using fabric purchased at Houston's downtown Foley's. He later found that nylon lasted only one year but Dacron lasted for several decades.

He went to medical school at Tulane after graduating as valedictorian of his high school class. While a surgery resident at a New Orleans charity hospital, DeBakey first saw a living human heart—pink and pulsating in the chest of a knifing victim. "I saw it beating and it was a beautiful work of art," DeBakey said in a 1987 interview. "I still have an almost religious sense when I work on the heart. It is something God makes and we have yet to duplicate."

In the late 1930's, DeBakey married his first wife, Diana, a nurse he met in New Orleans. They had four sons: Michael, Ernest, Barry and Denis. When DeBakey came to Houston in 1948 to head the surgery department at Baylor College of Medicine, he moved his family into a home near Rice University, only five minutes from the medical center so he would not waste time commuting. He never moved from that home.

Diana died in 1972 of a heart attack. After a medical meeting in Mexico, she had complained of an upset stomach and had been admitted to the

hospital to find out what was wrong. While DeBakey was in surgery on someone else, he got a call that there was an emergency. When he reached her bedside, she had died.

Three years after Diana's death DeBakey married German film actress, Katrin Fehlhaber, whom he met through Frank Sinatra. They have a daughter, Olga.

"Many consider Michael E. DeBakey to be the greatest surgeon ever," the Journal of the American Medical Association said in 2005. By the time Dr. DeBakey stopped a regular surgical schedule, when he was in his 80's, he had performed more than 60,000 operations. He also made Houston a major center for heart surgery and research and turned Baylor into one of the nation's great medical institutions. Dr. DeBakey's surgical innovations have become common practice today and have saved tens of thousands of lives. He and his team were the first to transplant four organs (a heart, two kidneys and a lung) from one donor to different recipients.

He was one of the organizers of what became the mobile army surgical hospital, or MASH unit, in the Korean War. The Army awarded him the Legion of Merit award for changing the strategy of treating the wounded.

Among his notable patients were Presidents Kennedy, Johnson and Nixon, the Duke of Windsor, the Shah of Iran and King Hussein of Jordan. He had a long and distinguished career as a medical pioneer and a public policy statesman. His many awards and recognitions include the Lasker Award for Clinical Research, the Presidential Medal of Freedom and the National Medal of Science. Just three months before his death, he received one of the nation's highest civic honors, the Congressional Gold Medal.

He was preceded in death by his sons Ernest O. DeBakey and Barry E. DeBakey; and his brother, Dr. Ernest G. DeBakey. In addition to his wife, Katrin, and their daughter, Olga, DeBakey is survived by sons Michael DeBakey of Lima, Peru, and Denis DeBakey of Houston; and two sisters Lois and Selma DeBakey, both medical editors and linguists at Baylor.

He was the first and, thus far, the only person to lie in state at the Houston City Hall.

I.B.W.

Ralph David Feigin
1938–2008

A native of New York City, Ralph David Feigin received his A.B. degree from Columbia University in 1958. He received his medical degree from Boston University School of Medicine in 1962. His internship was at Boston City Hospital from1962 to 1963. He was a resident there until 1964 when in 1965 he completed his residency at Massachusetts General Hospital.

From 1965 to 1967 he completed a research assignment with the United States Army Research Institute of Infectious Diseases in Frederick MD. In 1967 he was certified by the American Board of Pediatrics. From 1967 to 1968 he served as Chief Resident of the Children's Service at Massachusetts General Hospital.

In 1968 he joined the faculty of Washington University School of Medicine in St. Louis, MO as an instructor in pediatrics. In 1969 he was promoted to be Assistant Professor of pediatrics, to be Associate Professor in 1972 and to Professor in 1974. He served as director of the Division of Infectious Diseases in the Department of Pediatrics from 1973 to 1977 and as director of the Bacteriology and Serology Laboratories at the St. Louis Children's Hospital from 1972 to 1977.

In July of 1977 he was appointed as the J. S. Abercrombie Professor of Pediatrics and Chairman of the Department of Pediatrics at Baylor College of Medicine and Physician-in-Chief of Texas Children's Hospital.

From 1987 to 1989 he served as Executive Vice President (interim executive director) of Texas Children's Hospital. He served as Physician-in Chief, Pediatric Services at Ben Taub Hospital and Chief of Pediatric Service at the Methodist Hospital.

In 1990 he was named, by the Board of Trustees of Baylor College of Medicine, as a Distinguished Service Professor. In 1992 he was appointed Senior Vice President of Baylor College of Medicine and in 1994 he was appointed Dean of Medical Education for Baylor College of Medicine. He held these positions until his appointment as President and Chief Executive Officer of Baylor College of Medicine in January of 1996. He served in this office until March of 2003.

He was a member of and active in numerous pediatric and infectious disease organizations at national, state and local levels. He was a visiting professor at several medical schools.

He co-authored a number of books. The most noted is Feigin and Cherry's Textbook of Pediatric Infectious Diseases which has several reprintings.

He was known for his intelligence, his extraordinary memory, his talent and his tenacious pursuit of excellence. His visionary leadership raised Texas Children's Hospital to the highest ranks of children's hospitals.

The Texas Children's Hospital research building has been named in his honor and memory.

Ralph David Feigin, a non-smoker, died of lung cancer August 14, 2008. He leaves his wife Judith, three children, and six grandchildren.

P.G.B.

Philip Guthrie Hoffman
1915–2008

The University of Houston (UH) lost a transformative figure when Dr. Philip G. Hoffman died in October 2008 at the age of 93. Hoffman's efforts as the fifth president of the university and first chancellor of the University of Houston System were the driving force behind the institution's growth. His achievements were critical to the rise of UH from what was for a time (1945-1963) a private institution facing deep financial troubles to a prominent, state-supported research university.

Born in Kobe, Japan, to missionary parents, Hoffman was raised in Oregon from the age of 5. He earned a bachelor of arts in business administration from Pacific Union College in Oregon and master's in history from the University of Southern California, and then served as a Naval intelligence officer during World War II before earning his doctorate in history at Ohio State in 1948. He subsequently taught at Ohio State and the University of Alabama before returning to Oregon as dean of the general extension division for the Oregon State System of Higher Education.

Hoffman and his wife Mary, a niece of President Warren G. Harding, came to Houston in 1957 when he joined UH as vice president and dean of faculties. He succeeded Clanton W. Williams as president in 1961.

Soon thereafter, Hoffman managed one of the most important issues of the day for the university, the integration of his campus, with particular grace. He said later it was one of his proudest moments at the university, as it was accomplished without great strife and controversy.

Hoffman led the effort to affiliate UH with the State of Texas and won legislative approval in 1961. Under his leadership through 1977, the university's enrollment more than doubled, from a little over 12,000 to nearly 30,000. His fund-raising savvy raised millions for UH and fostered rapid growth of the university's physical facilities. During Hoffman's tenure, UH built, remodeled or expanded 31 structures, one of which now carries his name.

After stepping down as president, Hoffman remained as first chancellor of the University of Houston System that he helped establish. The system includes four universities as well as off-campus and distance-learning sites.

Hoffman retired as chancellor in 1979, but retirement didn't suit him for long. Hoffman became president of the Texas Medical Center in 1981, serving until 1984.

As a Houstonian for 51 years, he served on the boards of the Houston Chamber of Commerce, the Society for the Performing Arts, the Houston Symphony Society, and the Houston Museum of Natural Science. He held many honorary degrees and represented President Lyndon Johnson at the opening of the 1964 U.S. Trade Exposition in Algiers, Algeria.

Hoffman laid the groundwork for the enormous strides that UH continues to make. Renu Khator, today's dynamic chancellor of the University

of Houston, described Hoffman as a person of "extraordinary generosity and vision, and a source of inspiration" for her and the university today. Hoffman's commitment to excellence and opportunity left a mark not only on the University of Houston, but much more broadly on the city.

D.W.L.

Ruth Levy Kempner
1917–2008

(From the eulogy delivered on June 19, 2008 at the service for Ruth Levy Kempner.)

My Friends:

I have been privileged to know several folk in my life who were truly outstanding characters. One was my own mother. I can best describe her as the type who would tell the cow how to eat the cabbage. Ruth Levy Kempner was just such a lady, as well. She had no hesitancy in telling others just what she thought. And as a result, we were all truly blessed. And, intriguingly, my mother's name was Ruthe and today is her birthday.

On this road of life we travel, there are passengers, there are drivers and there are guides. Ruth was a consummate example of the latter and for many of us, she was OUR guide. Today we gather to honor her memory and to share in our mutual loss with her family.

Lest there is *anyone* in this room who would think Ruth Kempner was reticent to give directions, and that I have misspoken, let me quickly relieve them of that perception. Permit please a few personal recollections. Not only did this dear lady tell me how she wanted her mother's funeral years ago, that is until Harris induced her silence, but she also gave me clear instructions about some of today's events. And if you think I am going to deviate one hairsbreadth, you are quite wrong.

Fortunately all of my conversations with Ruth were not regarding funerals. We discussed the pros and cons of a summer at the Bod—that is the Bodleian Library at Oxford; the problems of raising children in Galveston; the qualities of a good Rabbi for B'nai Israel; and a host of other topics as varied as I could ever imagine. Clearly there never was a hesitation nor a taboo area. Ruth had an insatiable eclectic interest in everything that was ever fed by her voracious appetite for reading.

Perhaps the most telling of our conversations is the one that reveals a part of this beautiful soul that most of us all knew and which clearly benefited not only everyone she knew, but the entire community as well. While Mayor of the city, Barbara Crews, in what I presume was an off moment, appointed me to chair the City Ethics Committee. No sooner had it hit the newspaper pages than I got a call from Ruth expecting to see me pronto.

Presenting myself at the appointed time, Ruth began a pointed remind-

er of my obligations to Galveston and to those folk who worked hard to establish an accountable city government. I remember the clear warning, "don't do any harm to my charter." Clearly she knew the needs of our Island and the far piece we had come since the old commissioner days. She wanted to be sure our committee did not take any steps backward. We didn't, *but* the Council did.

It seemed clear to me that Ruth was always mindful of where she lived and the privileges life gave her. She took them seriously and knew that with them came responsibilities and obligations. I think she also knew that in carrying out those responsibilities she was able to bestow blessings upon others.

I also learned over the years in our conversations about the human, soft side of this lady. Her veneer served her well, but her ability to feel, to touch, to cry, were not only present but were, I believe, her measure of herself. We should never think the cover was the book, even when writ large.

Ruth experienced during her life the loves and losses that all of us will share. Yet in many ways hers were more public because of the role she played in Galveston. As a result, her experiences were just a bit more first hand. Most particularly was her loss of Sandy. In the face of his death, she came back to bless us all with among other things an even greater commitment to our library. Truly a lady of dignity and presence.

In the face of all that came her way, she was truly blessed with loving family and friends; most especially her devoted son and daughter, and their children. Shrub, you and Peaches and your kids know how important you were in your mom's life, especially after Harris' death. Permit me to remind you to always call upon the wonderful times you were privileged to share with her. They are truly the choicest of her legacy vouched safe to you. It's clear to all of us that you all were the reason for her living into her ninth decade.

With Ruth Levy Kempner's passing we lose another from a great generation that helped shaped our community. The loss of the special lady leaves our world a darker than before. The solace is that we are much better off for her involvement and for her life.

From the book of Proverbs, Scripture speaks directly to us about this dear soul: Her ways were ways of pleasantness, and all her paths sought peace. *18* She was as a tree of life to those who embraced her; and by her were we blessed.

May we continue to live our lives so as to merit the blessing her life was for us.

Kain y'hi ratsone—so may it be God's will.

J.L.K.

Roy M. Mersky
1925–2008

Professor Roy M. Mersky, Director of the Tarlton Law Library and Jamail Center for Legal research at The University of Texas School of Law, died May 6, 2008.

Professor Mersky was born in New York City on September 1, 1925 and attended public school in the Bronx. During Work War II, while a member of the 87th Infantry Division in General Patton's 3rd Army, he fought during the Battle of the Bulge. He was awarded the bronze star, a purple heart, and numerous campaign ribbons along with the combat infantry badge.

Following the war, Professor Mersky attended the University of Wisconsin where he received a Bachelor of Science degree, a law degree, and a Masters of Applied Library Science.

Roy Mersky became a Professor of Law at The University of Texas in 1965 and became Directory of the Tarlton Law Library. He is noted for the number of law library directors who were trained under his tutelage. He was the author and contributor to scores of books and articles and was nationally recognized as an expert in legal research, the history of the United States Supreme Court, law and language, law and popular culture, and rare law books. He was a frequent speaker in this country and abroad and once served as Interim Director of the Jewish National and University Library of Hebrew University. In 2005 he was awarded the Gallagher Distinguished Service Award by the American Association of Law Libraries, among other honors.

In addition to being a member of the Philosophical Society of Texas, he was also a member of the American Law Institute and the American Society for International Law.

J.M.M.

Charles P. Storey
1923–2008

Charles P. Storey, known to his countless friends as Chuck, died on July 21, 2008, after living a life full of grace and good fortune. He had a lanky, athletic frame that served him well, from his days as an all-city basketball player at Woodrow Wilson High School in Dallas until the moment he was struck down by a heart attack on a cruise off the coast of Canada at the age of 85.

Chuck made life look easy. He was blessed with a sunny nature and an open-handed spirit that made him welcome everywhere he went. He was steady and modest, but his ceaseless support of civic and charitable causes, especially the YMCA and the Dallas Council of World Affairs, for which he was a founding director, helped build the community that he made his home.

As a lawyer, he practiced most of his career at Storey, Armstrong, Steger and Martin, which his father, Robert G. Storey Sr., had organized. Chuck lived somewhat in the shadow of his father's mighty reputation—Colonel Storey had been head of the U.S. prosecution team in the Nuremberg Trials and president of the Southern Methodist University Law School—but Chuck rose to become a senior partner in that firm, along the way becoming president of the Dallas Bar Association, a director of the State Bar Association, and chairman of the Southwest Legal Foundation (now the Center for American and International Law). Chuck was particularly known for taking on pro bono cases for less fortunate clients. Later in his career, he formed another firm, Storey and Martin, and then became senior counsel to Carrington Coleman Sloman & Blumenthal.

Chuck had much to be thankful for, but chief among them was his family, including his wife, Helen; his three sons, Harry Stephens Storey, Dr. Charles Porter Storey, Jr., and Dr. Fred Storey; along with eight grandchildren.

Like the athlete he had once been, Chuck Storey left an impression on those who watched him navigate through life. He was a natural.

L.G.W.

John Archibald Wheeler
1911–2008

John Archibald Wheeler was a distinguished scientist and a peerless mentor. He died at his home in Hightstown, New Jersey, on April 13, 2008, at age 96.

Wheeler was born in Jacksonville, Florida on July 9, 1911. Growing up, he liked tinkering and mathematics. He received his PhD in physics from Johns Hopkins University in 1933 where he used the then-new framework of quantum mechanics to study scattering and absorption of light by helium atoms. He took a postdoctoral year with Gregory Breit at New York University and then a second year with Niels Bohr in Copenhagen. Upon his return to the United States, he married Janette Latourette Zabriskie Heger, with whom he remained married for 72 years, and spent three years on the faculty at the University of North Carolina. In 1938, he moved to Princeton University where he worked much of the rest of his life, with the exception of a decade-long sojurn at the University of Texas at Austin. At Princeton he was the Joseph Henry Professor and later Joseph Henry Professor Emeritus.

Nuclear physics dominated Wheeler's early career. He invented the notion of the scattering S-matrix in 1937. He was one of the first people in the world to hear about nuclear fission during a visit by Niels Bohr to Princeton in 1939. He co-authored with Bohr a pioneering paper on the liquid-drop model of the nucleus in 1939 that provided a theoretical understanding of fission. Wheeler worked on the Manhattan Project during WW II, in particular on the design and operation of the reactors in Han-

ford Washington that produced plutonium. After the war, he was instrumental in starting a cosmic ray laboratory at Princeton and in work on the hydrogen bomb under the auspices of Project Matterhorn at Princeton. In the wake of the launch of Sputnik in 1957, he advocated the consultation of scientists on important defense issues, first in what he termed Project 137 (named for the inverse of the fine structure constant) and then in what evolved into Jason, an institution that still operates today.

In 1952, Wheeler's work underwent a major change in direction. Giving up work on particles and nuclear physics, he turned his attention to what was then a backwater, the notions of curved space and time of Einstein's general relativity. Wheeler's attention revitalized the field, both theoretically and as an experimental science and brought on the golden age of relativity, during which Princeton and Texas were two of the major recognized centers.

In the latter portion of his career, Wheeler returned to basic issues of the quantum nature of existence, and of existence itself. While this portion of his work was not as concretely productive as some of his earlier work, his ability to state fundamental conundrums succinctly stimulated a great deal of thinking and commentary on the most profound problems facing physics.

Upon retiring from Princeton in 1976, Wheeler moved to the University of Texas at Austin to become the Director of the Center for Theoretical Physics and in 1979 the Ashbel Smith Professor of Physics. This represented a time when Wheeler shifted his attention from the fields of general relativity to issues of information and the quantum. It was during this time that his "delayed choice" experiment on the collapse of the quantum wave function was performed by colleagues at Texas A&M University. From this era also came seeds of the understanding of quantum demolition, the transition from quantum to classical behavior in ever-larger systems. Wheeler returned to Princeton in 1986.

Throughout his career, Wheeler regarded teaching and mentoring younger people as a critical aspect of his life. He left a cadre of famous students. With Richard Feynman, he developed key ideas concerning positrons and electrodynamics. With Kip Thorne, he brought new life to studies of neutron stars and black holes. The famous text book *Gravitation* by Charles Misner, Thorne, and Wheeler has been a classic since its publication in 1973. Other general relativists who studied with Wheeler at Princeton include Jacob Bekenstein and William Unruh.

While he was Wheeler's student at Princeton, Hugh Everett formulated the "many histories" approach to the interpretation of measurements in quantum mechanics, which has become increasingly influential. Among the graduate students supervised by Wheeler at Texas were Wojciech Zurek, a pioneer in the development of the idea of decoherence in quantum mechanics, and William Wooters, who has made important contributions to quantum information theory.

In addition to his deep understanding of physics and concern for guid-

ing students, Wheeler had a remarkable talent for wordsmithing. Although he did not invent the phrase, he was responsible for promoting the term "black hole," which both stimulated research and has become an iconic phrase in modern culture. He also famously invented the phrase "worm hole," which has also long since been assimilated into popular thought. Less well known, but still powerfully influential were the phrases "Planck length", "time and mass", and "quantum foam;" notions that remain central to the quest for rigorous theory of quantum gravity. He summarized general relativity with the phrase "matter tells space how to curve and curved space tells matter how to move." He captured the profoundly simple essence of black holes with the phrase "a black hole has no hair." He defined the fundamental issues involved in existence in terms of information, "it from bit." And he commented that "topology is too important to be left to the mathematicians."

Wheeler had three children: Letitia Wheeler Ufford of Princeton; James English Wheeler of Ardmore, Pa.; and Alison Wheeler Lahnston of Princeton. Janette pre-deceased him by a few months. He is also survived by eight grandchildren and 16 great-grandchildren.

Wheeler published 10 books as well as a voluminous record of research papers. He received many awards, among which were the Cressey-Morrison Prize of the New York Academy of Sciences, 1946, the Enrico Fermi Award of the U.S. Energy Research and Development Agency, 1968, the Franklin Medal of the Franklin Institute, 1969, the National Medal of Science, 1971, the Niels Bohr International Gold Medal, 1982, the Oersted Medal, 1983, the J. Robert Oppenheimer Memorial Prize, 1984 and the Wolf Prize in Physics in 1997, often considered the most prestigious international prize in physics after the Nobel Prize.

In 1998 Wheeler co-wrote with Kenneth Ford a remarkable autobiography *Geons, Black Holes, and Quantum Foam: A Life in Physics*. A special memorial issue of *Physics Today* was devoted to Wheeler in April 2009.

Austin M. Gleeson
Steven Weinberg
J. Craig Wheeler

Joseph Irion Worsham
1913–2008

Joseph Irion Worsham was involved in civic, charitable, and religious affairs in Dallas for nearly 70 years. Following in his father's footsteps, he built on a heritage as old as Texas. He went by his middle name, Irion, in honor of his great-grandfather, R. A. Irion, Sam Houston's secretary of state in 1836, who was also one of the founders of the Philosophical Society of Texas in 1837.

Born in Dallas on March 20, 1913 to Joe A. and Annabel Irion Wor-

sham, he graduated from the Terrill Preparatory School for Boys in 1928, The University of Texas in 1933 (Summa cum Laude), and Harvard Law School in 1936 (Cum Laude).

In 1937, he followed his father into the practice of law, first with the firm Worsham, Burford, Ryburn, and Hincks, and thereafter different successor firms that eventually became Worsham, Forsythe, and Wooldridge, L.L.P., which later merged with Hunton and Williams of Richmond, Virginia.

In 1952 he was appointed by the Texas Supreme Court as a member of the Board of Legal Examiners and served in that capacity until 1968. He was a member of the American, Texas, and Dallas Bar Associations, the American Judicature Society, and (formerly) the American College of Trust and Estate Counsel. He was admitted to practice before the United States Supreme Court, the Supreme Court of Texas, the federal District Courts of Northern, Eastern, and Western Districts of Texas, and the United States Court of Appeals for the Fifth Circuit.

He was a lifelong and devoted member of the Episcopal Church, first with the Church of the Incarnation, and later with Trinity Episcopal Church, where he was a founding member, vestryman, and senior warden. Nationally, he served as a Deputy to the Episcopal General Convention on eight different occasions, and locally, was chancellor of the Diocese of Dallas for many years, as well as its parliamentarian, and received the Layman of the Year award in 1956.

In World War II, he served his country as Naval Intelligence officer, based in Galveston. His civic credits include service on the Town Council of Highland Park and the Highland Park Community League, St. Phillips Community Center, and Gaston Episcopal Hospital. A founder of St. Marks School of Texas, he was one of its original trustees. He was a member of the Salesmanship Club of Dallas, Little Sandy Hunting and Fishing Club, Dallas Country Club, and the Northwood Club, where he served as its fourth President in 1950.

He was preceded in death by his parents, his sister, Josephine Worsham Moore, and a great granddaughter, Elisabeth Anne Worsham. He is survived by a large and loving family, including his wife of seventy-one years, Harriet Lang Worsham; his daughter Alice Worsham Bass and her husband, Richard D. Bass; his son, Joseph A.I. Worsham and his wife Donna S. Worsham; and his daughter, Raguet Worsham Hall and her husband, Thos. R. Hall. Also surviving are ten grandchildren and eighteen great-grandchildren.

R.D.B.

Officers of the Society

For the Year 2008

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Boone Powell

First Vice President
Michael L. Gillette

Second Vice President
John Mark McLaughlin

Secretary
Ron Tyler

Treasurer
J. Chrys Dougherty III

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Michael L. Gillette
John Mark McLaughlin
Isabel B. Wilson
S. Roger Horchow
Harris L. Kempner Jr.
Alfred F. Hurley
J. Sam Moore Jr.
George C. Wright
Ellen C. Temple
A. Baker Duncan
Patricia Hayes

Past Presidents

*Mirabeau Buonaparte Lamar	1837–59
*Ira Kendrick Stephens	1936
*Charles Shirley Potts	1937
*Edgar Odell Lovett	1938
*George Bannerman Dealey	1939
*George Waverley Briggs	1940
*William James	1941
*George Alfred Hill Jr.	1942
*Edward Henry Cary	1943
*Edward Randall	1944
*Umphrey Lee	1944
*Eugene Perry Locke	1945
*Louis Herman Hubbard	1946
*Pat Ireland Nixon	1947
*Ima Hogg	1948
*Albert Perley Brogan	1949
*William Lockhart Clayton	1950
*A. Frank Smith	1951
*Ernest Lynn Kurth	1952
*Dudley Kezer Woodward Jr.	1953
*Burke Baker	1954
*Jesse Andrews	1955
*James Pinckney Hart	1956
*Robert Gerald Storey	1957
*Lewis Randolph Bryan Jr.	1958
*W. St. John Garwood	1959
*George Crews McGhee	1960
*Harry Huntt Ransom	1961
*Eugene Benjamin Germany	1962
*Rupert Norval Richardson	1963
*Mrs. George Alfred Hill Jr.	1964
*Edward Randall Jr.	1965
*McGruder Ellis Sadler	1966
*William Alexander Kirkland	1967
*Richard Tudor Fleming	1968

*Deceased

*Herbert Pickens Gambrell	1969
*Harris Leon Kempner	1970
*Carey Croneis	1971
*Willis McDonald Tate	1972
*Dillon Anderson	1973
*Logan Wilson	1974
*Edward Clark	1975
*Thomas Hart Law	1976
*Truman G. Blocker Jr.	1977
*Frank E. Vandiver	1978
*Price Daniel	1979
*Durwood Fleming	1980
Charles A. LeMaistre	1981
*Abner V. McCall	1982
*Leon Jaworski	1983
Wayne H. Holtzman	1983
Jenkins Garrett	1984
Joe R. Greenhill	1985
William Pettus Hobby	1986
*Elspeth Rostow	1987
John Clifton Caldwell	1988
J. Chrys Dougherty III	1989
*Frank McReynolds Wozencraft	1990
William C. Levin	1991
*William D. Seybold	1992
Robert Krueger	1993
Steven Weinberg	1994
*William H. Crook	1995
*Charles C. Sprague	1996
Jack S. Blanton	1997
William P. Wright Jr.	1998
Patricia Hayes	1999
A. Baker Duncan	2000
Ellen C. Temple	2001
George C. Wright	2002
J. Sam Moore Jr.	2003
Alfred F. Hurley.	2004
Harris L. Kempner	2005
S. Roger Horchow	2006
Isabel B. Wilson	2007
Boone Powell	2008

*Deceased

MEETINGS

of The Philosophical Society of Texas

1837—Founded at Houston, December 5
1840—Austin, January 29
1936—Chartered, January 18
1936—Reorganizational meeting—Dallas, December 5
1937—Meeting and inaugural banquet—Dallas, January 29
1937—Liendo and Houston, December 4
1938—Dallas
1939—Dallas
1940—San Antonio
1941—Austin
1942—Dallas
1943—Dallas
1944—Dallas
1945—Dallas
1946—Dallas
1947—San Antonio
1948—Houston
1949—Austin
1950—Houston
1951—Lufkin
1952—College Station
1953—Dallas
1954—Austin
1955—Nacogdoches
1956—Austin
1957—Dallas
1958—Austin
1959—San Antonio
1960—Fort Clark
1961—Salado
1962—Salado
1963—Nacogdoches
1964—Austin
1965—Salado
1966—Salado
1967—Arlington
1968—San Antonio
1969—Salado
1970—Salado
1971—Nacogdoches
1972—Dallas
1973—Austin (Lakeway Inn)
1974—Austin
1975—Fort Worth
1976—San Antonio
1977—Galveston
1978—Houston
1979—Austin
1980—San Antonio
1981—Dallas
1982—Galveston
1983—Fort Worth
1984—Houston
1985—College Station
1986—Austin
1987—Kerrville
1988—Dallas
1989—San Antonio
1990—Houston
1991—Galveston
1992—Dallas
1993—Laredo
1994—Austin
1995—Corpus Christi
1996—Dallas
1997—Houston
1998—Abilene
1999—Austin
2000—San Antonio
2001—Austin
2002—Fort Worth
2003—El Paso
2004—Denton
2005—Galveston
2006—Dallas
2007—Houston
2008—San Antonio

PREAMBLE

We the undersigned form ourselves into a society for the collection and diffusion of knowledge—subscribing fully to the opinion of Lord Chancellor Bacon, that "knowledge is power"; we need not here dilate on its importance. The field of our researches is as boundless in its extent and as various in its character as the subjects of knowledge are numberless and diversified. But our object more especially at the present time is to concentrate the efforts of the enlightened and patriotic citizens of Texas, of our distinguished military commanders and travelers,—of our scholars and men of science, of our learned members of the different professions, in the collection and diffusion of correct information regarding the moral and social condition of our country; its finances, statistics and political and military history; its climate, soil and productions; the animals which roam over our broad prairies or swim in our noble streams; the customs, language and history of the aboriginal tribes who hunt or plunder on our borders; the natural curiosities of the country; our mines of untold wealth, and the thousand other topics of interest which our new and rising republic unfolds to the philosopher, the scholar and the man of the world. Texas having fought the battles of liberty, and triumphantly achieved a separate political existence, now thrown upon her internal resources for the permanence of her institutions, moral and political, calls upon all persons to use all their efforts for the increase and diffusion of useful knowledge and sound information; to take measures that she be rightly appreciated abroad, and acquire promptly and fully sustain the high standing to which she is destined among the civilized nations of the world. She calls on her intelligent and patriotic citizens to furnish to the rising generation the means of instruction within our own borders, where our children—to whose charge after all the vestal flame of Texian liberty must be committed—may be indoctrinated in sound principles and imbibe with their education respect for their country's laws, love of her soil and veneration for her institutions. We have endeavored to respond to this call by the formation of this society, with the hope that if not to us, to our sons and successors it may be given to make the star, the single star of the West, as resplendent for all the acts that adorn civilized life as it is now glorious in military renown. Texas has her captains, let her have her wise men.

Members of the Society

(Name of Spouse Appears in Parentheses)

ABOUSSIE, MARILYN (JOHN HAY), chief justice of the Texas Third Court of Appeals, *Austin and San Angelo*

ADAMS, PHIL, board of regents, Texas A&M University; director, American Momentum Bank; Texas Public Policy Foundation Board, *Bryan*

ALLBRITTON, JOE LEWIS (BARBARA), lawyer; board chairman, Riggs National Corporation, *Washington, D.C.*

ARNOLD, DANIEL C. (BEVERLY), private investor, *Houston*

ASHBY, LYNN COX (DOROTHY), former editor, editorial page, *Houston Post*; member, Houston Philosophical Society; author, columnist, *Houston*

ATLAS, MORRIS (RITA), lawyer; senior partner, Atlas and Hall, *McAllen*

BABCOCK, CHARLES L. (NANCY), general counsel, Texas Association of Broadcasters; chairman, Texas Supreme Court Advisory Board Committee, *Houston*

BARNES, SUSAN J., reverend, assistant rector, St. Matthew's Episcopal Church, *Austin*

BARNETT, LYNN (RANDY), director, Abilene Cultural Affairs Council, *Abilene*

BARNHILL, JOHN W. (JANE), member, The University of Texas Board of Regents; Chairman of the Bank of Brenham; Board of Directors for Blue Bell Creameries; past president of the Texas Exes; past chair of The University of Texas System Chancellor's Council, *Brenham*

BARROW, THOMAS D. (JANICE), president, T-Bar-X, Ltd., *Houston*

BARTLETT, RICHARD C., Environmental Flows Advisory Committee; chairman, Advisory Committee on Outreach & Education, Texas Parks and Wildlife Commission, *Carrollton*

BASH, FRANK (SUSAN), director, McDonald Observatory, The University of Texas at Austin, *Austin*

BASS, JAMES (HONG), president, Ojai Goliad, LLC; chair, Life Sciences Committee of the Greater Dallas Chamber of Commerce, *Dallas*

BASS, RICHARD "DICK" D. (ALICE), co-authored *Seven Summits*; board of directors, Y.M.C.A., Dallas; Lifetime Achievement, National Ski Area Association, *Dallas*

BEAUMONT, PENNY (ROGER), Vice Chancellor, Communications and Development Texas A&M University System; State Board, Court Appointed Special Advocates, *Bryan*

BELL, PAUL GERVAIS (SUE), retired general contractor, *Houston*

BIGGS, EDWARD GLENN (ANN), former chairman, Baylor University Board of Regents and First National Bank, *San Antonio*

BLANTON, JACK S., JR. (LESLIE), chairman, Nicklos Drilling Company; former chairman & CEO ADCOR-Nicklos Drilling Company; Chairman & CEO JEM Group, *Houston*

BLANTON, JACK S., SR. (GINGER), former chairman, current board member, Houston Endowment Inc., *Houston*

BOBBITT, PHILIP C., professor of law, The University of Texas at Austin; author, *Austin*

BOLES, JOHN B. (NANCY), William Pettus Hobby Professor of History at Rice University, managing editor of the *Journal of Southern History*, *Houston*

BRANDS, H. W., member of Society of American Historians; Dickson Allen Anderson Centennial Professor of History, The University of Texas at Austin; author, *Austin*

BRINKERHOFF, ANN BARBER, chair, UTMB Centennial Commission; Hogg Foundation national advisory board; vice president, Houston Community College Foundation; chairman emeritus, Liberal Arts Foundation, The University of Texas at Austin; chair, Women's Institute, Austin, *Houston*

BROWN, MICHAEL S. (ALICE), professor of molecular genetics and director, Jonsson Center for Molecular Genetics, the University of Texas Southwestern Medical Center at Dallas; 1985 Nobel laureate in physiology or medicine, *Dallas*

BROWNELL, BLAINE A. (MARDI), president, Ball State University, *Muncie, IN*

BRYAN, J. P., (MARY JON), CEO, Torch Energy Advisors Inc.; former president, Texas State Historical Association, *Houston*

BURKA, PAUL J. (SARAH), senior executive editor of *Texas Monthly*, co-creator of biennial Best and Worst Legislators feature; former attorney with the Texas Legislature, *Austin*

BURNS, FRED C., chairman and managing partner, John L. Wortham & Son; President, Wortham Foundation, Inc.; board of directors, JP Morgan Chase Bank of Texas, *Houston*

BURTON, W. AMON JR. (CAROL), attorney; adjunct professor, University of Texas School of Law; National Conference of Bar Examiners' Multistate Professional Responsibility Examination, *Austin*

BUSH, GEORGE W. (LAURA), president of the United States of America, *Washington, D.C.*

BUSH, LAURA WELCH (GEORGE), first lady of the United States of America, founder of the Texas Book Festival, *Washington, D.C.*

BUTT, CHARLES C., chairman of the board and chief executive officer, H. E. Butt Grocery Company, *San Antonio*

CALDWELL, JOHN CLIFTON (SHIRLEY), rancher; former chairman, Texas Historical Commission; former president, Texas State Historical Association, *Albany*

CALGAARD, RONALD KEITH (GENIE), chief operating officer, Austin, Calvert, and Flavin, Inc.; former president, Trinity University, *San Antonio*

CAMPBELL, RANDOLPH "MIKE" B. (DIANA SNOW), Regents Professor of History, University of North Texas, *Denton*

CANTRELL, GREGG, professor of history, Texas Christian University, *Fort Worth*

CAPPER, JOYCE PATE (ROBERT), founder, Abraham Lincoln Appreciation Society; honorary consular, Grand Duchy of Luxembourg; organized first Edna Gladney Auxiliary in 1965; opened Pate Museum of Transportation in Cresson, Texas, *Fort Worth*

CAPPER, ROBERT S. (JOYCE), president, Fort Worth Chapter of the American Heart Association; vice chairman, Harris Methodist Health Foundation, *Fort Worth*

CARDENAS, BLANDINA, president of The University of Texas-Pan American, former member of U.S. Commission on Civil Rights; member of Mexico's "Orden del Aquila Azteca," *Edinburgh*

CARLSON, PAUL H., professor of history, Texas Tech University; director, Texas Tech Center for the Southwest; author *The Plains Indians, Pecos Bill: A Military Biography of William R. Shaffer,* and *Empire Builder in the Texas Panhandle: William Henry Bush*, *Ransom Canyon*

CARLETON, DON E. (SUZANNE), director, Center for American History, The University of Texas at Austin, *Austin*

CARPENTER, ELIZABETH "LIZ," former assistant secretary of education, Washington correspondent, White House press secretary; consultant, LBJ Library; author and speaker, *Austin*

CARSON, RONALD (UTE), Harris L. Kempner Distinguished Professor in the Humanities in Medicine and director of the Institute for the Medical Humanities, The University of Texas Medical Branch at Galveston, *Galveston*

CATTO, HENRY E. (JESSICA), former U.S. ambassador to Great Britain and El Salvador; vice-chairman, Aspen Institute; former vice-chairman, National Public Radio; former director, U.S. Information Agency, *San Antonio*

CAVAZOS, LAURO F. (PEGGY ANN), former U.S. secretary of education; former president, Texas Tech University and Texas Tech University Health Sciences Center, *Port Aransas*

CHEW, DAVID WELLINGTON (MANDY), Chief Justice, Eighth Court of Appeals, 2006 to present; 8th Court of Appeals Justice, 1996–2007; past representative, City Council of El Paso; practicing attorney specializing in immigration and nationality law; former Lieutenant Commander, United States Navy; *El Paso*

CIGARROA, FRANCISCO (GRACIELA), president, The University of Texas Health Science Center; pediatric and transplant surgeon, *San Antonio*

CIGARROA, JOAQUIN G., JR. (BARBARA), physician, internal medicine and cardiology, *Laredo*

CLEMENTS, WILLIAM P., JR. (RITA), former governor of Texas; former chairman, SEDCO, Inc.; former U.S. deputy secretary of defense, *Dallas*

COERS, DONALD, Provost, Vice President, Academic Affairs, Angelo State University; award winning author and international expert on the works of John Steinbeck; state president, Texas Council of Faculty Senates, *San Angelo*

CORMIER, RUFUS (YVONNE), attorney and partner in the Houston office of Baker Botts L.L.P., *Houston*

CORNYN, JOHN, U.S. Senator, Deputy Whip in Senate, *San Antonio*

COX, PATRICK (BRENDA), assistant director, Center for American History, The University of Texas at Austin; historian; writer, *Austin*

CRAIN, JOHN WALKER (MIMI), president of Summerlee Foundation; board of directors, Texas State Historical Association, *Dallas*

CRAVEN, JUDITH LYNN BERWICK (MORITZ), past president, United Way of the Texas Gulf Coast; regent, The University of Texas System, *Houston*

CRIM, WILLIAM ROBERT (MARGARET), investments, *Kilgore*

CRISP, JAMES E., professor of history, North Carolina State University; member, Academy of Outstanding Teachers; author, *Raleigh, NC*

CROOK, MARY ELIZABETH (MARC LEWIS), author; member, Texas Institute of Letters, *Austin*

CRUTCHER, RONALD A. (BETTY), provost and executive vice president for academic affairs, Miami University; cellist, *Oxford, OH*

CRUZ, R. TED (HEIDI), Solicitor General of Texas; Adjunct Professor of Law, The University of Texas School of Law, *Austin*

CULLUM, LEE, journalist contributing columns to Dallas *Morning News* and commentaries to National Public Radio's *All Things Considered* and to *News Hour with Jim Lehrer;* author of *Genius Came Early: Creativity in the Twentieth Century*, *Dallas*

CUNNINGHAM, WILLIAM H. (ISABELLA), former president, The University of Texas at Austin; former chancellor, The University of Texas System, *Austin*

CURTIS, GREGORY (TRACY), editor, *Texas Monthly, 1981-2000*; author, *Austin*

DAILEY, MACEO (SONDRA), director of African American Studies and assistant professor of history at The University of Texas at El Paso; board chair of Humanities Texas, *El Paso*

DAVIS, D. JACK (GAIL), dean of the School of Visual Arts, University of North Texas, *Denton*

DAVIS, RAMONA, executive director, Greater Houston Preservation Alliance, *Houston*

DE WETTER, MARGARET BELDING, artist and poet, *El Paso*

DEAN, DAVID A. (JEAN), lawyer; former secretary of state, Texas, *Dallas*

DECHERD, ROBERT W. (MAUREEN), chairman, president, and chief executive officer, A. H. Belo Corporation, *Dallas*

DE LA TEJA, JESÚS F. (MAGDALENA), Appointed first Texas Historian 2007 by the Governor; Department of History Chair, Texas State University; President Board of Directors, Texas State Historical Association, *San Marcos*

DELCO, WILHELMINA (EXALTON), former member, Texas House of Representatives; civic leader; adjunct professor, Community College Leadership Program, The University of Texas at Austin; and chair, Board of Trustees, Huston-Tillotson College, *Austin*

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DENTON, P. LYNN (MARK), founding director of the Bob Bullock Texas State History Museum; past-president, Texas Association of Museums, *Dripping Springs*

DEWHURST, DAVID, lieutenant governor of Texas, veteran, businessman, rancher, *Austin*

DICK, JAMES, founder-director, International Festival-Institute at Round Top; concert pianist and teacher, *Round Top*

DJEREJIAN, EDWARD P. (FRANCOISE HAELTERS), Founding and present Director of the James Al Baker III Institute for Public Policy at Rice University, former U.S. Ambassador to Israel and former U.S. Ambassador to the Syrian Arab Republic, *Houston*

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DOUGHERTY, J. CHRYS, IV (MARY ANN), director of research, Just for the Kids, *Austin*

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DUNCAN, CHARLES WILLIAM, JR. (ANNE), chairman, Duncan Interests; former secretary, U.S. Energy Department; deputy secretary, U.S. Defense Department; president, The Coca-Cola Company; chairman, Rotan Mosle Financial Corporation, *Houston*

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FAULKNER, LARRY R. (MARY ANN), president, The University of Texas at Austin, *Austin*

FEHRENBACH, T. R. (LILLIAN), author; historian; former chairman, commissioner emeritus, Texas Historical Commission; former chairman, Texas Antiquities Committee; fellow, Texas State Historical Association, *San Antonio*

FISHER, RICHARD (NANCY), ambassador and deputy U.S. trade representative; vice-chair, Overseas Private Investment Corp. (OPIC), former managing partner, Fisher Capital Management; former executive assistant to U.S. secretary of the treasury; adjunct professor, Lyndon Baines Johnson School of Public Affairs, The University of Texas at Austin; democratic nominee for U.S. Senate, 1994; founder, Dallas Committee on Foreign Relations, *Dallas*

FLATO, EDWARD C. (KATY), architect, Lake/Flato, *San Antonio*

FLAWN, PETER T. (PRISCILLA), president emeritus, The University of Texas at Austin, *Austin*

FLEMING, CHERYL (JON), dean, Margaret Petree School of Performing Arts in Oklahoma City; served as advisor-consultant of the Metropolitan Opera; award-winning poet, *North Zulch*

FLEMING, JON HUGH (CHERYL), educator; consultant; businessman; former president, Texas Wesleyan College; former member, Governor's Select Committee on Public Education, *North Zulch*

FLORES, DIONICIO, regent, Texas State University; executive vice-president and editor, *El Paso Times*, *El Paso*

FLOWERS, BETTY SUE, director, Lyndon Baines Johnson Presidential Library, *Austin*

FRANCIS, JAMES B. JR., president, Francis Enterprises, Inc; board of directors, Silverleaf Resorts, Inc; trustee, Southwest Research Institute, *Dallas*

FRANCIS, L. FREDERICK "RICK" (GINGER), vice chairman, director, Bank of the West; board of directors, Western Refining Inc; Board of Regents

Chairman, Texas Tech University System; board of managers, El Paso Workforce Collaborative, *El Paso*

FRAZIER, DONALD (SUSAN), professor of history, McMurry University; fellow and executive director, Grady McWhiney Research Foundation, *Abilene*

FROST, PAT (KELLEY), president, Frost National Bank; serves on over ten non-profit boards in San Antonio, *San Antonio*

FROST, TOM C. (PATRICIA), senior chairman of the board, Frost National Bank, *San Antonio*

FURGESON, W. ROYAL, JR. (JULI), United States district judge, Western District of Texas, *San Antonio*

GALBRAITH, JAMES K. (YING TANG), professor, Lyndon Baines Johnson School of Public Affairs, The University of Texas at Austin, *Austin*

GALVAN, ISRAEL J. (MARSHA ANN PERLMAN), founder and president of GHG Corp., *League City*

GALVIN, CHARLES O'NEILL (MARGARET), centennial professor of law, emeritus, Vanderbilt University, Nashville; of counsel, Haynes and Boone, L.L.P., Dallas; distinguished professor of law emeritus, Southern Methodist University, *Dallas*

GARCIA, JULIET VILLARREAL (OSCAR E.), president of The University of Texas at Brownsville and Texas Southmost College, *Brownsville*

GARNER, BRYAN ANDREW (PAN), author; lecturer; lawyer; president, LawProse, *Dallas*

GARRETT, JENKINS (VIRGINIA), lawyer; former member, board of regents, the University of Texas System; former chairman, board of trustees, Tarrant County Junior College; distinguished alumnus award, The University of Texas at Austin, *Fort Worth*

GARWOOD, WILLIAM L. (MERLE), judge, U.S. Court of Appeals, Fifth Circuit, *Austin*

GEORGE, ROGER JAMES, JR. (CHERYL), trial lawyer, founding partner of George & Donaldson, LLP, *Austin*

GILLETTE, MICHAEL L. (LEANN), director, Humanities Texas; retired, National Archives, *Austin*

GILLIS, MALCOLM (ELIZABETH), president, Rice University, *Houston*

GLICKMAN, JULIUS (SUZAN), chairperson, Chancellor's Council, University of Texas System; adjunct professor of Law, University of Houston; board of directors, Houston Symphony, Jack S. Blanton Museum of Art; European Subcommittee, Houston Museum of Fine Art, *Houston*

GOETZMANN, WILLIAM H. (MEWES), Jack S. Blanton Sr. Endowed Chair in History and American Studies, THe University of Texas at Austin, Pulitzer Prize-winning author, *Austin*

GOGUE, GEORGE J. (SUSIE), Chancellor, University of Houston System; President, University of Houston; board of directors, Greater Houston Partnership; member, Texas International Education Consortium, *Houston*

GOLDSTEIN, JOSEPH L., professor of medicine and molecular genetics, The University of Texas Southwest Medical Center; Nobel laureate in medicine or physiology, *Dallas*

GORDON, WILLIAM EDWIN, distinguished professor emeritus, Rice University; foreign secretary (1986–1990), National Academy of Sciences, *Houston*

GRANOF, MICHAEL H. (DENA HIRSCH), member, U.S. Comptroller General's Advisory Committee Council on Government Auditing Standards and Educational Advisory Committee; member, University of Texas System Advisory Council; professor of accounting, University of Texas at Austin, *Austin*

GRANT, JOSEPH M., chairman and chief executive officer, Texas Capital Bancshares, Inc., *Dallas*

GREENHILL, JOE R. (MARTHA), lawyer; former chief justice, Supreme Court of Texas, *Austin*

GRUBEN, WILLIAM C. (MARILU), vice president, senior economist, Federal Reserve Bank of Dallas; director, Bank's Center for Latin American Economics; adjunct professor, Department of Economics, Southern Methodist University, & Department of International Studies, University of Texas at Dallas, *Dallas*

GUEST, WILLIAM F., attorney; chairman, American Capitol Insurance Company, *Houston*

GULLETT, JOHN, physician, *Abilene*

GUNTER, PETE A.Y. (ELIZABETH), Regents Professor of Philosophy, University of North Texas; member, Texas Institute of Letters; board of directors, *Southwest Philosophy Review*; president, Association for Process Philosophy of Education; lifetime board member and past president, Big Thicket Association, *Denton*

GUTHRIE, JUDITH K., United States Magistrate Judge, U.S. District Court, Eastern District of Texas, *Tyler*

HAMILTON, ANN THOMAS, grant officer, Houston Endowment, Inc.; director Jacob and Terese Hershey Foundation, *Houston*

HAMM, GEORGE FRANCIS (JANE), president, The University of Texas at Tyler, *Tyler*

HARDESTY, ROBERT L. (MARY), former president, Southwest Texas State University; former assistant to the president of the United States; former chairman, board of governors, United States Postal Service; former vice-chancellor, The University of Texas System, *Austin*

HARRIGAN, STEPHEN MICHAEL (SUE ELLEN), author; contributing editor, *Texas Monthly, Austin*

HARTE, CHRISTOPHER M. (KATHERINE STODDARD POPE), investments, *Portland, ME*

HARTE, EDWARD HOLMEAD, former publisher, Corpus Christi *Caller-Times*, *Corpus Christi*

HAY, JESS (BETTY JO), chairman, HCB Enterprises, Inc.; chairman, Texas Foundation for Higher Education; former member, board of regents, The University of Texas System, *Dallas*

HAYES, PATRICIA A., executive vice-president and chief operating officer, Seton Healthcare Network, *Austin*

HECHT, NATHAN LINCOLN, justice, Supreme Court of Texas, *Austin*

HERSHEY, TERESE TARLTON "TERRY," civic leader; Houston Parks Board; National Association of Flood Plain Managers Foundation; National Recreation and Park Association; Texas Women's Hall of Fame; former board member, National Audubon Society; Trust for Public Lands, Texas Parks and Wildlife Commission; Lady Bird Johnson Wildflower Center; Frances K. Hutchison Medal for distiguished service to conservation, Garden Club of America, *Houston*

HEYER, GEORGE STUART, JR., emeritus professor of the history of doctrine, Austin Presbyterian Theological Seminary, *Austin*

HIGGINBOTHAM, PATRICK E. (ELIZABETH), judge, U.S. Court of Appeals, Fifth Circuit, *Dallas*

HILGERS, WILLIAM B., attorney; former chairman, Supreme Court of Texas Grievance Oversight Committee, *Del Valle*

HILL, LYDA, president, Hill Development Company and Seven Falls Company, *Dallas*

HINES, GERALD DOUGLAS (BARBARA), chairman, Hines Interests, *Houston*

HIXON, SARITA A. (ROBERT), commissioner Texas Historical Commission 2005, past chair of San Jacinto Museum of History; Elected Kenedy County Commissioner, Precinct 3 2008. *Houston*

HO, JAMES C. (ALLYSON), attorney, Gibson, Dunn, & Crutcher, LLP; law clerk, U.S. Supreme Court Justice Clarence Thomas, *Dallas*

HOBBY, DIANA (WILLIAM), *Houston*

HOBBY, WILLIAM PETTUS (DIANA), lieutenant governor of Texas, 1973–1991; Radoslav A. Tsanoff Professor, Rice University1989–present;; Sid Richardson Professor, Lyndon Baines Johnson School of Public Affairs, The University of Texas at Austin, 1991-1997; chancellor, University of Houston System, *Houston*

HOLLAMAN, ELIZABETH E., former head, Trinity Episcopal School, educational consultant; president, Cavalry Consulting, *Galveston*

HOLTZMAN, WAYNE H. (JOAN), professor of psychology and education emeritus; special councel,Hogg Foundation for Mental Health, The University of Texas at Austin, *Austin*

HOOK, HAROLD SWANSON (JOANNE), retired chairman and chief executive, American General Corporation; trustee, Baylor College of Medicine; former national president of the Boy Scouts of America; Texas Business Hall of Fame, *Houston*

HORCHOW, S. ROGER (CAROLYN), founder and former CEO of the Horchow Collection, author, theatrical producer, *Dallas*

HOWE, JOHN P., III, physician; president and CEO, Project Hope, *Washington, D.C.*

HUDSON, EDWARD R. JR. (ANN FRASHER), independent oil producer; board member, Kimbell Art Foundation, Burnett Foundation, Modern Art Museum of Fort Worth, Aspen Art Museum, and Aspen Center for Physics, Friends of Art and Preservation in Embassies, *Fort Worth*

HUEY, MARY EVELYN (GRIFFIN), president emerita, Texas Woman's University, *Denton*

HUFFINES, JAMES R. (PATTY), former chairman of the Board of Regents of the University of Texas System and current vice chairman of the Board of Regents; Chairman, Central & South Texas for Plains Capital Bank, *Austin*

HUGHES, VESTER T., JR.; lawyer; founding partner, Hughes & Luce, *Dallas*

HUNT, WOODY L. (GAYLE), chairman and CEO, Hunt Building Corporation; member, The University of Texas System Board of Regents; member of numerous local and state business and charitable boards, *El Paso*

HURLEY, ALFRED FRANCIS (JOANNA), chancellor, University of North Texas System, *Denton*

HUTCHISON, KAY BAILEY (RAY), U.S. senator; former state treasurer, Texas, *Dallas and Washington, D.C.*

INMAN, BOBBY R. (NANCY), admiral, U.S. Navy (retired); investor, *Austin*

JACK, JANIS GRAHAM (WILLIAM DAVID), U.S. district judge, *Corpus Christi*

JACKSON, LEE, chancellor, University of North Texas System; former member, Texas House of Representatives; four-time Dallas County Judge, *Denton*

JACOBS, GARY, chairman, president, and CEO, Laredo National Bancshares Inc., *Laredo*

JAMAIL, JOSEPH D., JR. (LEE), attorney; philanthropist, *Houston*

JAMES, THOMAS N. (GLEAVES), cardiologist; Professor of Medicine, Professor of Pathology, Inaugural Holder of the Thomas N. and Gleaves T. James Distinguished Chair in Cardiological Sciences, former president, The University of Texas Medical Branch at Galveston, *Galveston*

JOHNSON, CLAY III, Deputy Director, Management, Office of Management and Budget, *Washington D.C.*

JOHNSON, LUCI BAINES (IAN TURPIN), chair of the LBJ Holding Company, *Austin*

JORDAN, BRYCE (BARBARA), former president, Pennsylvania State U niversity, *Austin*

JUSTICE, WILLIAM WAYNE (SUE), senior judge, U.S. District Court, Eastern District of Texas, sitting by designation in the Western District of Texas, *Austin*

** KAIN, COLLEEN T., retired executive assistant, The University of Texas at Austin, *Austin*

KECK, RAY M. (PATRICIA), president, Texas A&M International University, former provost & vice-president for Academic Affairs, *Laredo*

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KELSEY, MAVIS PARROTT SR., retired physician; founder and former chief, Kelsey-Seybold Clinic, *Houston*

KELTON, ELMER (ANNA), fiction writer, livestock journalist, *San Angelo*

KEMPNER, HARRIS L., JR. (HETTA), trustee, H. Kempner; president, Kempner Capital Management, Inc., *Galveston*

KESSLER, JAMES LEE (SHELLEY), Rabbi, Temple B'nai Israel; founder and first president, Texas Jewish Historical Society, *Galveston*

KING, CAROLYN DINEEN (THOMAS M. REAVLEY), chief judge, U.S. Court of Appeals for the Fifth Circuit, *Houston*

KING, ROBERT D., professor, Linguistics, founding dean, College of Liberal Arts, The University of Texas at Austin, *Austin*

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KLEIN, MELVYN N. (ANNETTE), managing partner of GKH Partners, L.P., attorney; adjunct professor, Texas A&M University-Corpus Christi, *Corpus Christi*

KRIER, CYNDI TAYLOR (JOSEPH), former member, Texas Senate; vice-president of Texas government relations, USAA; partner, Vallejo Ranch, *San Antonio*

KRUEGER, ROBERT "BOB" CHARLES (KATHLEEN), U.S. Ambassador to Botswana; former U.S. senator, congressman, ambassador to Burundi, ambassador-at-large to Mexico; former Texas Railroad commissioner; former vice-provost and dean of Arts and Sciences, Duke University; president, Krueger Associates, *New Braunfels*

LABOON, ROBERT BRUCE (RAMONA), partner, Locke Liddell & Sapp, *Houston*

LANE, NEAL (JONI), senior fellow, James A. Baker III Institute for Public Policy, Department of Physics and Astronomy, Rice University; director, White House Office of Science and Technology Policy, *Houston*

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LASATER, GARLAND M., JR. (MOLLIE), board member, Community Foundation of North Texas, McDonald Observatory of The University of Texas, Aspen Center for Physics, Museum of Science and History, *Fort Worth*

LEBERMANN, LOWELL H., JR., president, Centex Beverage, Inc., *Austin*

LEE, ELIZABETH MAXWELL (WILLIAM), executive director, Foundation for the Education of Young Women; founder, Irma Rangel Leadership School for Young Women, *Dallas*

LEEBRON, DAVID W. (Y. PING SUN), president, Rice University, former dean Columbia University School of Law, *Houston*

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LINDSEY, JOHN H. (SARA), businessman; art collector; civic leader; former member, board of directors, Museum of Fine Arts; director, Alley Theatre; member, board of regents, Texas A&M University System; former member of the board of the United States Military Academy at West Point, *Houston*

LIVINGSTON, WILLIAM S. (LANA), senior vice president, The University of Texas at Austin, *Austin*

LOCHRIDGE, LLOYD (FRANCES), lawyer; former president, State Bar of Texas; former member, board of governors, American Bar Association, *Austin*

LOCKE, JOHN PATRICK (RAMONA), president, Locke Holdings, Inc., *Dallas*

LORD, GROGAN (BETTY), senior chairman, First Texas Bancorp; member, Texas Securities Board; trustee, Southwestern University, *Georgetown*

LOW, GILBERT, lawyer, *Beaumont*

LOWE, RICHARD (KATHY), Regents Professor, University of North Texas; author and recipient of Jefferson Davis Award of the Museum of the Confederacy for *Walker's Texas Division, CSA: Greyhounds of the Trans-Mississippi*, author of several books, *Denton*

LOWMAN, ALBERT T. (DARLYNE), past president, Texas Folklore Society, Book Club of Texas, Texas State Historical Association; managing partner, Lowman Ranch, Ltd., *San Marcos*

MACKINTOSH, PRUDENCE M. (JOHN), author; member, Texas Institute of Letters, *Dallas*

MACON, JANE (LARRY), attorney, city and trial attorney, City of San Antonio, *San Antonio*

MADDEN, WALES H., JR. (ABBIE), attorney; former member, board of regents, The University of Texas System, *Amarillo*

MARGO, ADAIR WAKEFIELD (DONALD R. "DEE"), owner, Adair Margo Gallery; member, Texas Higher Education Coordinating Board; State Advisory Council, Texas Book Festival; chairman, President's Council on the Arts and Humanities, *El Paso*

MARK, HANS (MARION), professor of aerospace engineering, The University of Texas at Austin, *Austin*

MARSH, GWENDOLYN "WENDY" O. (STANLEY), civic volunteer active in arts and education, *Amarillo*

MARTIN, JAMES C., interim director, Texas State Historical Association; former executive director, San Jacinto Museum of History Association, *Austin*

MARTIN, ROBERT S. (BARBARA), director, Institute for Museum and Library Sciences; former director, Texas State Library, *Corinth and Washington, D.C.*

MARTINEZ, PHILIP, El Paso district judge; former director El Paso Legal Assistance Society, El Paso Holocaust Museum, El Paso Cancer Treatment Center, and Hispanic Leadership Institute, *El Paso*

MARTINEZ, VIDAL G. (DEBORAH), partner, Franklin, Cardwell, & Jones; Chairman, Texas Public Education Reform Foundation, *Houston*

MARZIO, PETER CORT, director, the Museum of Fine Arts, Houston, *Houston*

MATTHEWS, JUDY JONES, president, Dodge Jones Foundation, *Abilene*

MATTHEWS, KATHLEEN SHIVE, dean, Wiess School of Natural Sciences, Rice University; elected to American Association for the Advancement of Science, *Houston*

MCCOMBS, B. J. "RED" (CHARLINE), owner, Minnesota Vikings, *San Antonio*

MCCORQUODALE, ROBIN HUNT; novelist, *Houston*

MCCOWN, F. SCOTT (MAURA POWERS), executive director, Center for Public Policy Priorities, retired judge, 345th District Court, Travis County, Texas, named by *Texas Monthly* as one of "The 25 Most Powerful People in Texas Politics," *Austin*

MCDERMOTT, MARGARET (EUGENE), The University of Texas at Austin Distinguished Alumna; patron of the arts, education, and medicine in various community involvements; member, International council of Museum of Modern Art in New York and the Dallas Shakespeare Club; honorary alumnus of the Massachusetts Institute of Technology, *Dallas*

MCFADDEN, JOSEPH M., president emeritus, professor of history, University of St. Thomas, *Houston*

MCHUGH, M. COLLEEN, member, Board of Regents, The University of Texas System, *Corpus Christi*

MCKNIGHT, JOSEPH WEBB (MIMI), professor, Southern Methodist School of Law; legal historian; law reformer, *Dallas*

MCLAUGHLIN, JOHN MARK (AMY), rancher, lawyer, and chairman of Texas State Bank, *San Angelo*

MCNEILL, LARRY, board member, Texas State Historical Association; board member, Texas Supreme Court Historical Society; president, managing shareholder, Clark, Thomas & Winters, P.C., *Austin*

MCREYNOLDS, JIM (JUDY), member, Texas House of Representatives; former faculty member, Stephen F. Austin State University; owner, Chaparral Energy, Inc., *Lufkin*

MENDELSOHN, JOHN (ANNE), President of the University of Texas M.D. Anderson Cancer Center in Houston since 1996, board member of Greater Houston Partnership, Houston Technology Center, BioHouston and Houston Forum, *Houston*

MIDDLETON, HARRY J. (MIRIAM), director emeritus, Lyndon B. Johnson Presidential Library and Museum; exeutive director, Lyndon B. Johnson Foundation, *Austin*

MILLER, CHARLES (BETH), chairman, Meridian National, Inc., *Houston*

MONDAY, JANE CLEMENTS (CHARLES), former regent, Texas State University System; public commissioner, Southern Association of College and Schools; author, *Huntsville*

MOORE, J. SAM, JR. (GRETA), retired lawyer; former chairman, Texas Committee for the Humanities; former member, Texas Law Review Association, *El Paso*

MOSELEY, JOHN DEAN (SARA BERNICE), president emeritus, Austin College; former director, Texas Legislative Council; consultant, *Sherman*

MOSLE, PAULA MEREDITH (JON), trustee and chairman, Hockaday School; former dean of women, Rice University; former governor current trustee advisor, Rice University, *Dallas*

MULLINS, CHARLES B. (STELLA), professor of internal medicine, J. Fred Schoelkopf, Jr. chair in cardiology, The University of Texas Southwestern Medical Center, *Dallas*

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MURPHY, EWELL E., JR., lawyer, retired partner, Baker & Botts L.L.P.; distinguished lecturer, University of Houston Law Center, *Houston*

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NICKLAUS, HELEN CAROL (TED), The University of Texas Liberal Arts Foundation Advisory Council, recipient of the Jim Veninga Award for Excellence in Humanities, Texas Council for the Humanities, *Amarillo*

NYE, ERLE A. (ALICE), chairman, Board of TXU Corporation; chairman, vice-chairman, Board of Regents, Texas A&M University System, *Dallas*

O'CONNOR, MACONDA B., philanthropist, scholar, and public activist. *Houston*

OLSON, LYNDON L., JR. (KAY), former U.S. Ambassador to Sweden, *Waco*

OSHINSKY, DAVID M., Jack S. Blanton Chair in History at The University of Texas at Austin; won Pulitzer Prize for History 2006 for *Polio: An American Story;* specialist in 20th century U.S. political and cultural history; frequent contributor to NY *Times* and other national publications, *Austin*

O'TOOLE, THOMAS F. (JANE), managing partner, Glenhest, Ltd; Director, National Alliance for Mental Illness, *Dallas*

OXFORD, PATRICK CUNNINGHAM (KATE), managing partner, Bracewell & Giuliani L.L.P.; board of regents, The University of Texas System; board member, M.D. Anderson Outreach, Inc. and Texas Medical Giants, *Houston*

PALAIMA, THOMAS G., professor of Classics at The University of Texas at Austin, *Austin*

PAREDES, RAYMUND A., Commissioner of Higher Education, Texas Higher Education Coordinating Board; board of directors, Texas Cultural Trust; board of trustees, Mercy College, New York, *Austin*

PATTERSON, PATRICIA M., president, Patterson Investments, Inc.; board of directors, Hockaday School, *Dallas*

PFEIFFER, FRED N. (ANN MARIA), engineer; attorney; General Manager, San Antonio River Authority, *San Antonio*

PHILLIPS, JEANNE JOHNSON (DAVID), senior vice president, Corporate Affairs and International Relations, Hunt Consolidated, Inc., Hunt Oil Company, Inc., *Dallas*

PHILLIPS, THOMAS ROYAL (LYN), chief justice, Supreme Court of Texas, *Austin*

POPE, JACK (ALLENE), former chief justice, Supreme Court of Texas, *Austin*

PORTER-SCOTT, JENNY LIND (LAWRENCE E.), poet and educator, former poet laureate of Texas, *Austin*

POWELL, BOONE (DIANNE), chairman, Ford, Powell, & Carson, Architects; College of Fellows, American Institute of Architects; former president, Texas Society of Architects; peer professional, U.S. General Services Administration, *San Antonio*

POWERS, WILLIAM C., President, The University of Texas at Austin, Hines H. Baker and Thelma Kelly Baker Chair, University Distinguished Teaching Professor, *Austin*

PRADO, EDWARD C. (MARIA), U.S. Circuit Judge, U.S. Court of Appeals; former U.S. District Court Judge, Western District of Texas; former U.S. Attorney, Western District of Texas, *San Antonio*

PRESSLER, H. PAUL, III (NANCY), justice (retired), Court of Appeals of Texas, Fourteenth Supreme Judicial District, *Houston*

PROTHRO, CAREN H. (C. VINCENT), member of board of Dallas Museum of Art, Dallas Center for the Performing Arts Foundation, and Southwestern Medical Foundation, *Dallas*

RAMEY, TOM B., JR. (JILL), lawyer; chief justice, Twelfth Court of Appeals, *Tyler*

RAMIREZ, MARIO E. (SARAH), physician; past member, board of regents, the University of Texas System; vice-president for South Texas Initiatives University of Texas Health Science Center San Antonio, *Rio Grande City*

RANDALL, EDWARD, III (ELLEN), private investor; board of directors, EOG Resources Inc., Kinder Morgan, Inc., and EcPutlook.com, Inc., *Houston*

RANDALL, RISHER (FAIRFAX), former senior vice president and director, American General Investment Corporation; manager, family trusts, investments, and real estate, *Houston*

REASONER, HARRY MAX (MACEY), lawyer; senior partner, Vinson & Elkins, *Houston*

READ, WAYNE A., attorney and philanthropist; member of The University of Texas System Chancellor's Council, *Beaumont*

REAVLEY, THOMAS M. (CAROLYN DINEEN KING), judge, U.S. Court of Appeals, Fifth Circuit, *Austin*

REYNOLDS, HERBERT H. (JOY), president emeritus, Baylor University; Air Force/NASA psychologist and neuroscientist, 1948-1968, *Waco*

RHODES, CHARLOTTE W. (ALEC), patron, Shakespeare at Winedale; chancellor's council, The University of Texas at Austin; Harry Ransom Humanities Research Center Advisory Council, The University of Texas at Austin, *Dripping Springs*

ROACH, JOYCE G., Spur Award winner, Western Writers of America; recipient, Carr P. Collins prize for non-fiction, Texas Institute of Letters, *Keller*

ROBINSON, MARY LOU, U.S. district judge; former state appellate and trial judge, *Amarillo*

RODRIGUEZ, EDUARDO ROBERTO, attorney, Rodriguez, Colvin & Chaney, L.L.P., *Brownsville*

RODRIGUEZ, RAÚL (LORENA), managing director and CEO, North American Development Bank, *San Antonio*

ROGERS, ELIZABETH, Assistant Federal Public Defender, Western District of Texas since 1984, board of directors, State Bar of Texas 2005–2008, *Alpine*

ROGERS, JESSE W. (KAREN), president, Midwestern State University; Commissioner, Southern Association of Colleges and Schools, *Wichita Falls*

ROMO, RICARDO (HARRIETT), president, The University of Texas at San Antonio, *San Antonio*

ROVE, KARL C. (DARBY), senior advisor and assistant to the President of the United States, *Washington, D.C.*

RUTFORD, ROBERT HOXIE (MARJORIE ANN), Excellence in Education Foundation Chair in Geoscience, The University of Texas at Dallas; former president, The University of Texas at Dallas; former director, Divison of Polar Programs, National Science Foundation; president, Scientific Committee on Antarctic Research, *Richardson*

SANSOM, ANDREW (NONA), executive director, River Systems Institute and Research Professor of Geography at Texas State University San Marcos; former executive director, Texas Parks & Wildlife Department; executive director, Texas Nature Conservancy; founder, The Parks and Wildlife Foundation of Texas, *San Marcos*

SCHRUM, JAKE B. (JANE), president, Southwestern University, *Georgetown*

SCHWITTERS, ROY F. (KAREN), S. W. Richardson Regents Chair in Physics, The University of Texas at Austin; former director, Super Conducting Super Collider, *Austin*

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SHINE, KENNETH I. (CAROLYN), Executive Vice Chancellor for Health Affairs at The University of Texas System Administration. *Austin*

SHIPLEY, GEORGE, president and chief executive officer, Shipley & Associates, Inc., *Austin*

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SMITH, BEA, Texas Court of Appeals in Austin, Adjunct Professor, The University of Texas School of Law, *Austin*

SMITH, CULLEN (MICKEY), attorney, former president of the State Bar of Texas; member, Advisory Council, College of the Arts and Sciences, Baylor University, *China Spring*

SMITH, EVAN, editor, *Texas Monthly*; secretary of the Boards of the American Society of Magazine Editors and the Austin Film Society; member of the Boards of the Jack S. Blanton Museum of Art, the Headliners Club, Marfa Public Radio, and Austin public television station, KLRU, *Austin*

SMITH, FRANK C., JR. (KATHERINE), electrical engineer; specialist in data processing and geosciences, *Houston*

SMITH, STEVEN ESCAR (NATALIE), director and C. Clifford Wendler Professor, Cushing Memorial Library and Archives, and associate dean for advancement, Texas A&M University Libraries, *College Station*

SPECK, LAWRENCE W., W.L. Moody Centennial Professor in the School of Architecture at The University of Texas at Austin, Dean School of Architecture 1992–2001, principal in Page Southerland Page, and American Institute of Architects Fellow, *Austin*

SPECTOR, ROSE (MORRIS), former Texas Supreme Court Justice, trial judge, and District Judge, *San Antonio*

SPIVEY, BROADUS A. (RUTH ANN), past president, State Bar of Texas, shareholder, Spivey & Ainsworth P.C., *Austin*

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STEPHENS, F .L. "STEVE" (POLLYANNA), former chairman, CEO, and co-founder, Town & Country Food Stores, Inc., *San Angelo*

STEVES, EDWARD GALT (NANCY), CEO, Steves & Sons, Inc., *San Antonio*

STEVES, MARSHALL T. (JANE), President and Chief Executive Officer of Crest Doors, Inc., *San Antonio*

STOBO, JOHN D. (MARY ANN), president, The University of Texas Medical Branch, *Galveston*

STRAYHORN, CAROLE KEETON (ED), former Comptroller of Public Accounts; former Texas Railroad Commissioner; Mayor of Austin; president, Austin Community College Board of Trustees; president, Austin Independent School District Board, *Austin*

STREAM, KATHRYN SHEAFFER (RICHARD), City of Houston Mayor's Task Force for International Visitors; member, Harris County, Homeland Security Task Force for Emergency Management; appointed, Rice-Chertoff Initiative for International Visitors to the U.S., *Denton*

STRONG, LOUISE CONNALLY (BEEMAN), professor of medical genetics; Sue and Radcliffe Chair, The University of Texas System Cancer Center; Phi Beta Kappa, *Houston*

STUART, ANN, Chancellor & President Texas Woman's University, past President, Rensselaer at Hartford, Connecticut, *Denton*

STUART, CLAUDIA (HAROLD), professor of Sociology, Criminal Justice, and Sports and Exercise Sciences at West Texas A&M University; author, *My Private Stock, Expressions, All Along Life's Journey* and *Living Out Loud, An Anthology of Poetry*, co-author *Sociology--The New Millennium*, second edition, *Amarillo*

SULLIVAN, TERESA A. (DOUG LAYCOCK), vice president and graduate dean, professor of sociology and law, Cox & Smith Faculty Fellow in Law at The University of Texas at Austin, *Austin*

SUTTON, JOHN F. (NANCY), A. W. Walker Centennial Chair in Law Emeritus, The University of Texas at Austin; former dean, The University Texas Law School; former practicing attorney, San Antonio and San Angelo, *Austin and San Angelo*

TAYLOR, LONN (DEDIE), historian, *Fort Davis*

TEMPLE, ELLEN C. (ARTHUR "BUDDY" III), former member and vice-chair, board of regents, The University of Texas System; publisher, Ellen C. Temple Publishing, Inc., *Lufkin*

TEMPLE, LARRY (LOUANN), lawyer; former chairman, Texas Higher Education Coordinating Board, *Austin*

THOMAS, GAIL GRIFFEN (ROBERT), president, The Trinity Trust Foundation, Dallas; founder, CEO, Cities Alive, *Dallas*

THOMASSON, CHARLES W. (WILLA), lawyer, *Corpus Christi*

TOBIN, DON, (PEGGY), former president, American Association of Petroleum Geologists, *Bandera*

TOTTEN, HERMAN LAVON, dean, School of Library & Information Sciences, University of North Texas; member, National Commission on Library & Information Science; former president, Texas Library Association, *Denton*

TRAUTH, DENISE, president, Texas State University; writer, *San Marcus*

TROTTER, BILLY BOB (PEGGY), pathologist; emeritus director, Laboratories of Hendrick Medical Center, *Abilene*

TYLER, RON C. (PAULA), director, Amon Carter Museum, Fort Worth; former director, Texas State Historical Association and the Center for Studies in Texas History; former professor of history, The University of Texas at Austin, *Fort Worth*

VENINGA, JAMES F. (CATHERINE WILLIAMS), CEO and campus dean University of Wisconsin-Marathon County, *Wausau, WI*

VENNEMA, DIANE STANLEY (PETER), author and illustrator, *Houston*

VICK, FRANCES BRANNEN, former director and co-founder, University of North Texas Press; councilor, Texas Institute of Letters and Texas Folklore Society; board, Texas Council for the Humanities, *Dallas*

WAINERDI, RICHARD E. (ANGELA), president and CEO, Texas Medical Center, *Houston*

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WEINBERG, LOUISE (STEVEN), William B. Bates Chair for the Administration of Justice and Professor of Law, The University of Texas at Austin, *Austin*

WEINBERG, STEVEN (LOUISE), Josey Regental Professor of Science, The University of Texas at Austin; Nobel Prize in physics; research and publications in physics and astronomy, *Austin*

WHITE, L. MICHAEL, Ronald Nelson Smith Endowed Chair in Classics, Founder of Religious Studies Program, Professor of Religious Studies, The University of Texas at Austin, *Austin*

WHITMORE, JON S. (JENNIFER), president, Texas Tech University, *Lubbock*

WHITTENBURG, GEORGE (ANN), lawyer; member, Council of the American Law Institute; Life Fellow, American Bar Foundation, *Amarillo*

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WILHELM, MARILYN, founder-director, Wilhelm Schole International; author, *Houston*

WILSON, ISABEL BROWN (WALLACE S.), board of trustees: The Brown Foundation, Houston; Smith College, Northampton, MA; chairman, Museum of Fine Arts, Houston; board of visitors, The University of Texas M.D. Anderson Cancer Center; advisory board, J.P. Morgan Chase Bank, Texas, *Houston*

WILSON, ROSINE MCFADDIN, historian and author; former president, Texas Historical Foundation; vice-chairman, Texas Historical Commission; president of the board, McFaddin-Ward House Museum; trustee, McFaddin-Ward Foundation; trustee, San Jacinto Museum of History, *Beaumont*

*WINFREY, DORMAN HAYWARD (RUTH CAROLYN), former secretary, Philosophical Society of Texas; former director, Texas State Library, *Austin*

WINTERS, J. SAM (DOROTHY), attorney, *Austin*

WITTLIFF, WILLIAM DALE (SALLY), typographer and publisher; president, Encino Press; movie scriptwriter and film producer; councilor, Texas Institute of Letters, *Austin*

WOOD, JANE ROBERTS, English professor, Dallas County Community College District, Fiction Writing, SMU; fellow, National Endowment of the Arts, National Endowment of Humanities; recipient, Texas Institute of Letters Short Story Award, *Argyle*

WOODRUFF, PAUL B. (LUCIA), professor of philosophy, The University of Texas at Austin; author, *Austin*

WRIGHT, GEORGE CARLTON (VALERIE), president, Prairie View A&M University, *Prairie View*

WRIGHT, JAMES S. (MARY), architect; senior partner, Page Southerland Page, *Dallas*

WRIGHT, LAWRENCE GEORGE (ROBERTA), author; staff writer, *The New Yorker*; screenwriter, *Austin*

WRIGHT, WILLIAM P. "BILL", JR. (ALICE), investments, author, photographer, former chairman, Western Marketing, Inc.; former member, National Council on the Humanities; former chairman, Texas Council on the Humanities; board of managers, School of American Research, Santa Fe; director, National Trust for the Humanities; The University of

Texas Press Advisory Council; commissioner, Texas Commission on the Arts, *Abilene*

WYNN, WILLIAM PATRICK, Mayor of Austin; member, Urban Land Institute; founder, Envision Central Texas; director, Children's Museum of Austin, Heritage Society of Austin, *Austin*

YEAGER, ELIZABETH, director, secretary, Perkins-Prothro Foundation; chairperson, Harry Ransom Center Advisory Council; member, Foundation and System Board, Cook Children's Healthcare System, *Wichita Falls*

YEAGER, KATHLEEN "KAY" (FRANK), former mayor, Wichita Falls, *Wichita Falls*

YOUNG, BARNEY T. (SALLY), founding partner, Rain, Harrell, Emery, Young, and Duke; of counsel Locke, Liddell & Sapp, *Dallas*

YOUNG, JAY T. (LAURIE), director, Business Development, Perot Systems Corp; Lt. Commander, US Naval Reserve; board of directors, Admiral Nimitz Foundation; book reviewer, Dallas Morning News, *Plano*

ZAFFIRINI, JUDITH (CARLOS), senator for the twenty-first district of Texas; owner, Zaffirini communications, *Laredo*

*Life Member
** Honorary Member

In Memoriam

(Date indicates year of Proceedings in which memorial is published.)

SAMUEL HANNA ACHESON (1971)
NATHAN ADAMS (1966)
CLAUDE CARROLL ALBRITTON JR. (1997)
JAMES PATTERSON ALEXANDER (1948)
AUGUSTUS C. ALLEN
WINNIE ALLEN (1985)
DILLON ANDERSON (1973)
ROBERT BERNERD ANDERSON (1990)
ANNE LEGENDRE ARMSTRONG (2008)
THOMAS D. ANDERSON (2007)
JESSE ANDREWS (1961)
MARK EDWIN ANDREWS (1992)
THOMAS REEVES ARMSTRONG
JAMES WILLIAM ASTON
WILLIAM HAWLEY ATWELL (1961)
KENNETH HAZEN AYNESWORTH (1944)
BURKE BAKER (1964)
HINES HOLT BAKER
JAMES ADDISON BAKER (1941)
JOSEPH BAKER
KARLE WILSON BAKER (1960)
WALTER BROWNE BAKER (1968)
CLINTON STANLEY BANKS (1991)
EDWARD CHRISTIAN HENRY BANTEL (1964)
REX GAVIN BAKER JR. (2004)
EUGENE CAMPBELL BARKER (1956)
MAGGIE WILKINS HILL BARRY (1945)
WILLIAM BARTHOLOMEW BATES (1974)
DEREK H. R. BARTON (1998)
WILLIAM JAMES BATTLE (1955)
WILLIAM BENNETT BEAN (1989)
HENRY M. BELL JR. (1999)
WARREN SYLVANUS BELLOWS (1966)
HARRY YANDELL BENEDICT (1937)
JOHN MIRZA BENNETT JR. (1993)
LLOYD M. BENTSEN (2006)
GEORGE JOHN BETO (1991)
JOHN HAMILTON BICKETT JR. (1947)
WILLIAM CAMPBELL BINKLEY (1970)
JOHN BIRDSALL
CHARLES MCTYEIRE BISHOP (1949)
WILLIAM BENNETT BIZZELL (1944)
JAMES HARVEY BLACK (1958)
ROBERT LEE BLAFFER (1942)
TRUMAN G. BLOCKER JR. (1984)
ROBERT LEE BOBBITT
MEYER BODANSKY (1941)
HERBERT EUGENE BOLTON (1953)
CHARLES PAUL BONER (1979)
CHARLES M. BONJEAN (2008)
GEORGE W. BONNELL
JOHN GUTZON DE LA MOTHE BORGLUM (1941)
HOWARD TANEY BOYD (1991)
PAUL LEWIS BOYNTON (1958)
EDWARD T. BRANCH
EDWARD N. BRANDT (2007)
LEO BREWSTER (1980)
GEORGE WAVERLEY BRIGGS (1957)
ALBERT PERLEY BROGAN (1983)
GEORGE RUFUS BROWN (1983)
JOHN R. BROWN (1994)
ANDREW DAVIS BRUCE (1968)
JAMES PERRY BRYAN (1975)
LEWIS RANDOLPH BRYAN JR. (1959)
BOB BULLOCK
JOHN W. BUNTON
RICHARD FENNER BURGES (1945)
WILLIAM HENRY BURGES (1946)
EMMA KYLE BURLESON (1941)
JOHN HILL BURLESON (1959)
DAVID G. BURNET
CHESTER R. BURNS (2006)
I. W. BURTON
GEORGE A. BUTLER (1992)
JACK L. BUTLER (1990)
CHARLES PEARRE CABELL (1970)
CLIFTON M. CALDWELL
GEORGE CARMACK (2002)

JOHN WILLIAM CARPENTER
EVELYN M. CARRINGTON (1985)
PAUL CARRINGTON (1989)
H. BAILEY CARROLL (1966)
MARY JO CARROLL (1994)
EDWARD HENRY CARY (1954)
ALBERT V. CASEY (2004)
CARLOS EDUARDO CASTAÑEDA (1958)
THOMAS JEFFERSON CHAMBERS
ASA CRAWFORD CHANDLER (1958)
MARION NELSON CHRESTMAN (1948)
EDWARD A. CLARK (1992)
JOSEPH LYNN CLARK (1969)
RANDOLPH LEE CLARK (1993)
TOM C. CLARK
WILLIAM LOCKHART CLAYTON (1965)
THOMAS STONE CLYCE (1946)
CLAUDE CARR CODY JR. (1960)
HENRY COHEN (1952)
HENRY CORNICK COKE JR. (1982)
MARVIN KEY COLLIE (1990)
JAMES COLLINSWORTH
ROGER N. CONGER (1996)
JOHN BOWDEN CONNALLY JR. (1994)
TOM CONNALLY (1963)
ARTHUR BENJAMIN CONNOR
C.W.W. "TEX" COOK (2003)
JOHN H. COOPER (1993)
MILLARD COPE (1963)
CLARENCE COTTAM (1974)
MARGARET COUSINS (1996)
MARTIN MCNULTY CRANE (1943)
CAREY CRONEIS (1971)
WILLIAM H. CROOK (1997)
JOSEPH STEPHEN CULLINAN (1937)
NINA CULLINAN
ROBERT B. CULLOM
MINNIE FISHER CUNNINGHAM
THOMAS WHITE CURRIE (1943)
JEAN HOUSTON BALDWIN DANIEL (2003)
PRICE DANIEL (1992)
WILLIAM E. DARDEN (1998)
HARBERT DAVENPORT
MORGAN JONES DAVIS (1980)
GEORGE BANNERMAN DEALEY (1946)
JAMES QUAYLE DEALEY
MICHAEL ELLIS DEBAKEY (2008)
EVERETT LEE DEGOLYER (1957)
GILBERT DENMAN (2004)
EDGAR A. DEWITT (1975)
ROSCOE PLIMPTON DEWITT
ADINA DEZAVALA (1955)
FAGAN DICKSON
CHARLES SANFORD DIEHL (1946)
FRANK CLIFFORD DILLARD (1939)
J. FRANK DOBIE (1964)
EZRA WILLIAM DOTY (1994)
GERRY DOYLE (1999)
HENRY PATRICK DROUGHT (1958)
FREDERICA GROSS DUDLEY
KATHARYN DUFF (1995)
J. CONRAD DUNAGAN (1994)
CLYDE EAGLETON (1958)
DWIGHT DAVID EISENHOWER
JAMES A. ELKINS (2006)
EDWIN A. ELLIOTT
ALEXANDER CASWELL ELLIS (1948)
JOE EWING ESTES (1991)
HYMAN JOSEPH ETTLINGER (1986)
LUTHER HARRIS EVANS
WILLIAM MAURICE EWING (1973)
WILLIAM STAMPS FARISH (1942)
SARAH ROACH FARNSWORTH
RALPH DAVID FEIGIN (2008)
CHARLES W. FERGUSON
WILLIAM CARRINGTON FINCH (2007)
JOE J. FISHER (2000)
STERLING WESLEY FISHER
LAMAR FLEMING JR. (1964)
LAWRENCE DURWOOD FLEMING (2007)
RICHARD TUDOR FLEMING (1973)
FRED FARRELL FLORENCE (1960)
JAMES LAWRENCE FLY
PAUL JOSEPH FOIK (1941)
LITTLETON FOWLER
CHARLES INGE FRANCIS (1969)
JOE B. FRANTZ (1993)
LLERENA BEAUFORT FRIEND (1998)
JESSE NEWMAN GALLAGHER (1943)
HERBERT PICKENS GAMBRELL (1983)
VIRGINIA LEDDY GAMBRELL (1978)
WILMER ST. JOHN GARWOOD (1989)
MARY EDNA GEARING (1946)
SAMUEL WOOD GEISER (1983)
EUGENE BENJAMIN GERMANY (1970)
ROBERT RANDLE GILBERT (1971)
GIBB GILCHRIST (1972)
JOHN WILLIAM GORMLEY (1949)
MALCOLM KINTNER GRAHAM (1941)
HOWARD DWAYNE GRAVES (2003)
IRELAND GRAVES (1969)
MARVIN LEE GRAVES (1953)
WILLIAM FAIRFAX GRAY
LEON A. GREEN (1979)

NEWTON GRESHAM (1996)
DAVID WENDELL GUION (1981)
NORMAN HACKERMAN (2007)
CHARLES WILSON HACKETT (1951)
WALTER GARNER HALL (2000)
JOHN HENRY HANNAH JR. (2003)
RALPH HANNA
HARRY CLAY HANSZEN (1950)
FRANKLIN ISRAEL HARBACH (1998)
THORNTON HARDIE (1969)
HELEN HARGRAVE (1984)
JAMES M. HARGROVE (2004)
HENRY WINSTON HARPER (1943)
MARION THOMAS HARRINGTON
GUY BRYAN HARRISON JR. (1988)
TINSLEY RANDOLPH HARRISON
JAMES PINCKNEY HART (1987)
HOUSTON HARTE (1971)
WILLIAM C. HARVIN III (2007)
RUTH HARTGRAVES (1995)
FRANK LEE HAWKINS (1954)
WILLIAM WOMACK HEATH (1973)
ERWIN HEINEN (1997)
JACOB W. HERSHEY (2000)
J. CARL HERTZOG (1988)
JOHN EDWARD HICKMAN (1962)
GEORGE ALFRED HILL JR. (1949)
GEORGE ALFRED HILL III (1974)
GEORGE W. HILL (1985)
JOHN L. HILL JR. (2007)
JOSEPH M. HILL (1999)
MARY VAN DEN BERGE HILL (1965)
ROBERT THOMAS HILL (1941)
JOHN E. HINES (1998)
OVETA CULP HOBBY (1995)
WILLIAM PETTUS HOBBY (1964)
ELA HOCKADAY (1956)
PHILIP GUTHRIE HOFFMAN (2008)
WILLIAM RANSOM HOGAN (1971)
IMA HOGG (1975)
THOMAS STEELE HOLDEN (1958)
EUGENE HOLMAN (1962)
JAMES LEMUEL HOLLOWAY JR.
PAUL HORGAN (1997)
A. C. HORTON
EDWARD MANDELL HOUSE (1939)
ANDREW JACKSON HOUSTON (1941)
SAM HOUSTON
WILLIAM VERMILLION HOUSTON (1969)
WILLIAM EAGER HOWARD (1948)
LOUIS HERMAN HUBBARD (1972)
JOHN AUGUSTUS HULEN (1957)
WILMER BRADY HUNT (1982)
FRANK GRANGER HUNTRESS (1955)
PETER HURD
HOBART HUSON
JOSEPH CHAPPELL HUTCHESON JR.
JUNE HYER (1980)
JULIA BEDFORD IDESON (1945)
FRANK N. IKARD SR. (1990)
R. A. IRION
WATROUS HENRY IRONS (1969)
PATRICK C. JACK
HERMAN GERLACH JAMES (1966)
LEON JAWORSKI (1982)
JOHN LEROY JEFFERS (1979)
JOHN HOLMES JENKINS III (1991)
HERBERT SPENCER JENNINGS (1966)
CLAUDIA T. JOHNSON (2007)
LYNDON BAINES JOHNSON (1973)
WILLIAM PARKS JOHNSON (1970)
MARGUERITE JOHNSTON (2005)
ANSON JONES
CLIFFORD BARTLETT JONES (1973)
ERIN BAIN JONES (1974)
EVERETT HOLLAND JONES (1996)
HOWARD MUMFORD JONES
JESSE HOLMAN JONES (1956)
JOHN TILFORD JONES JR. (1993)
MARVIN JONES (1977)
MRS. PERCY JONES (1978)
JOHN ERIK JONSSON (1996)
JACK S. JOSEY (2004)
DAVID S. KAUFMAN
PAGE KEETON
HERBERT ANTHONY KELLAR (1955)
ROBERT MARVIN KELLY (1958)
LOUIS WILTZ KEMP (1956)
HARRIS LEON KEMPNER SR. (1987)
RUTH LEVY KEMPNER (2008)
THOMAS MARTIN KENNERLY (1966)
DANIEL E. KILGORE (1995)
WILLIAM JACKSON KILGORE (1993)
EDWARD KILMAN (1969)
FRANK HAVILAND KING
WILLIAM ALEXANDER KIRKLAND (1988)
ROBERT JUSTUS KLEBERG JR. (1974)
DOROTHY W. KNEPPER (1998)
JOHN FRANCIS KNOTT
GEORGE KOZMETSKY (2003)
LAURA LETTIE SMITH KREY (1985)
ERNEST LYNN KURTH (1960)
POLYKARP KUSCH (1993)
LUCIUS MIRABEAU LAMAR III (1978)
MIRABEAU B. LAMAR
FRANCIS MARION LAW (1970)
THOMAS H. LAW (2006)
F. LEE LAWRENCE (1996)
CHAUNCEY DEPEW LEAKE (1978)
AMY FREEMAN LEE (2004)
UMPHREY LEE (1958)

DAVID LEFKOWITZ (1956)
MARK LEMMON (1975)
J. HUGH LIEDTKE (2003)
JEWEL PRESTON LIGHTFOOT (1950)
DENTON RAY LINDLEY (1986)
EUGENE PERRY LOCKE (1946)
JOHN AVERY LOMAX (1948)
WALTER EWING LONG (1973)
JOHN TIPTON LONSDALE (1960)
BEN F. LOVE (2006)
EDGAR ODELL LOVETT (1957)
H. MALCOLM LOVETT
ROBERT EMMET LUCEY (1977)
WILLIAM WRIGHT LYNCH
ABNER VERNON MCCALL (1995)
JOHN LAWTON MCCARTY
JAMES WOOTEN MCCLENDON (1972)
L. F. MCCOLLUM (1996)
CHARLES TILFORD MCCORMICK (1964)
IRELINE DEWITT MCCORMICK
MALCOLM MCCORQUODALE JR. (1990)
JOHN W. MCCULLOUGH (1987)
TOM LEE MCCULLOUGH (1966)
EUGENE MCDERMOTT
GEORGE CREWS MCGHEE (2005)
JOHN HATHAWAY MCGINNIS (1960)
ROBERT C. MCGINNIS (1994)
GEORGE LESCHER MACGREGOR (2001)
STUART MALOLM MCGREGOR
ALAN DUGALD MCKILLOP (1974)
BUKNER ABERNATHY MCKINNEY (1966)
HUGH MCLEOD
LEWIS WINSLOW MACNAUGHTON (1969)
AYLMER GREEN MCNEESE JR. (1992)
ANGUS MCNEILL
JOHN OLIVER MCREYNOLDS (1942)
JACK R. MAGUIRE (2001)
HENRY NEIL MALLON
GERALD C. MANN (1989)
STANLEY MARCUS (2001)
JOHN L. MARGRAVE (2005)
FRANK BURR MARSH (1940)
HARRIS MASTERSON III (1997)
WATT R. MATTHEWS (1997)
MAURY MAVERICK (1954)
ROY M. MERSKY (2008)
BALLINGER MILLS JR. (1992)
BALLINGER MILLS SR. (1947)
MERTON MELROSE MINTER (1978)
PETER MOLYNEAUX
JAMES TALIAFERRO MONTGOMERY (1939)
DAN MOODY (1966)
DAN MOODY JR. (2000)
BERNICE MILBURN MOORE (1993)
FRED HOLMSLEY MOORE (1985)
MAURICE THOMPSON MOORE
TEMPLE HOUSTON MORROW
JAMES M. MOUDY (2004)
WILLIAM OWEN MURRAY (1973)
FRED MERRIAM NELSON
CHESTER WILLIAM NIMITZ (1965)
PAT IRELAND NIXON (1965)
MARY MOODY NORTHEN (1991)
JAMES RANKIN NORVELL (1969)
CHILTON O'BRIEN (1983)
DENNIS O'CONNOR (1997)
CHARLES FRANCIS O'DONNELL (1948)
JOSEPH GRUNDY O'DONOHOE (1956)
LEVI ARTHUR OLAN (1984)
TRUEMAN EDGAR O'QUINN (1989)
JOHN ELZY OWENS (1951)
WILLIAM A. OWENS (1991)
LOUIS C. PAGE (1982)
GLORIA HILL PAPE (2002)
JUBAL RICHARD PARTEN (1993)
ADLAI MCMILLAN PATE JR. (1988)
ANNA J. HARDWICK PENNYBACKER (1939)
HALLY BRYAN PERRY (1966)
NELSON PHILLIPS (1966)
GEORGE WASHINGTON PIERCE (1966)
EDMUND LLOYD PINCOFFS (1991)
BENJAMIN FLOYD PITTINGER
KENNETH S. PITZER
GEORGE FRED POOL (1984)
CHARLES SHIRLEY POTTS (1963)
HERMAN PAUL PRESSLER JR. (1996)
CHARLES NELSON PROTHRO (2000)
HARRY MAYO PROVENCE (1996)
MAURICE EUGENE PURNELL
CHARLES PURYEAR (1940)
CLINTON SIMON QUIN (1956)
COOPER KIRBY RAGAN
HOMER PRICE RAINEY (1985)
CHARLES WILLIAM RAMSDELL (1942)
EDWARD RANDALL (1944)
EDWARD RANDALL JR. (1970)
KATHARINE RISHER RANDALL (1991)
LAURA BALLINGER RANDALL (1955)
JO STEWART RANDEL (2002)
HARRY HUNTT RANSOM (1976)
EMIL C. RASSMAN
FANNIE ELIZABETH RATCHFORD
SAM RAYBURN (1961)

JOHN SAYRES REDDITT (1972)
HERBERT H. REYNOLDS (2007)
LAWRENCE JOSEPH RHEA (1946)
WILLIAM ALEXANDER RHEA (1941)
JAMES OTTO RICHARDSON
RUPERT NORVAL RICHARDSON (1987)
JAMES FRED RIPPY
A.W. "DUB" RITER (2003)
SUMMERFIELD G. ROBERTS (1969)
FRENCH MARTEL ROBERTSON (1976)
CURTICE ROSSER
JOHN ELIJAH ROSSER (1960)
ELSPETH DAVIS ROSTOW (2007)
JOSEPH ROWE
JAMES EARL RUDDER (1969)
THOMAS J. RUSK
MCGRUDER ELLIS SADLER (1966)
JEFFERSON DAVIS SANDEFER (1940)
MARLIN ELIJAH SANDLIN
HYMAN JUDAH SCHACHTEL (1991)
EDWARD MUEGGE "BUCK" SCHIWETZ (1985)
VICTOR HUMBERT SCHOFFELMAYER (1966)
ARTHUR CARROLL SCOTT (1940)
ELMER SCOTT (1954)
JOHN THADDEUS SCOTT (1955)
WOODROW BRADLEY SEALS (1991)
TOM SEALY (1992)
GEORGE DUBOSE SEARS (1974)
WILLIAM G. SEARS (1997)
ELIAS HOWARD SELLARDS (1960)
WILLIAM DEMPSEY SEYBOLD (2004)
DUDLEY CRAWFORD SHARP
ESTELLE BOUGHTON SHARP (1965)
JAMES LEFTWICH SHEPHERD JR. (1964)
MORRIS SHEPPARD (1941)
JOHN BEN SHEPPERD (1989)
STUART SHERAR (1969)
PRESTON SHIRLEY (1991)
ALLAN SHIVERS (1985)
RALPH HENDERSON SHUFFLER (1975)
RALPH HENDERSON SHUFFLER II (2002)
D.J. SIBLEY (2005)
JOHN DAVID SIMPSON JR.
ALBERT OLIN SINGLETON (1947)
JOSEPH ROYALL SMILEY (1991)
A. FRANK SMITH JR. (1993)
A. FRANK SMITH SR. (1962)
ASHBEL SMITH
FRANK CHESLEY SMITH SR. (1970)
HARLAN J. SMITH (1991)
HENRY SMITH
HENRY NASH SMITH
THOMAS VERNON SMITH (1964)
HARRIET WINGFIELD SMITHER (1955)
ROBERT S. SPARKMAN (1997)
RALPH SPENCE (1994)
JOHN WILLIAM SPIES
TOM DOUGLAS SPIES (1960)
CHARLES C. SPRAGUE (2005)
STEPHEN H. SPURR (1990)
ROBERT WELDON STAYTON (1963)
ZOLLIE C. STEAKLEY (1991)
RALPH WRIGHT STEEN (1980)
IRA KENDRICK STEPHENS (1956)
MARSHALL T. STEVES (2001)
CHARLES PORTER STOREY (2008)
ROBERT GERALD STOREY (1981)
GEORGE WILFORD STUMBERG
HATTON WILLIAM SUMNERS (1962)
JEROME SUPPLE (2004)
ROBERT LEE SUTHERLAND (1976)
HENRY GARDINER SYMONDS (1971)
MARGARET CLOVER SYMONDS (2001)
WILLIS M. TATE (1989)
JAMES U. TEAGUE (1996)
ROBERT EWING THOMASON (1974)
J. CLEO THOMPSON (1974)
BASCOM N. TIMMONS (1987)
LON TINKLE (1980)
CHARLES RUDOLPH TIPS (1976)
MARGARET LYNN BATTS TOBIN (1994)
VIRGIL W. TOPAZIO (1999)
JOHN G. TOWER (1991)
HENRY TRANTHAM (1961)
FRANK EDWARD TRITICO SR. (1993)
ROBERT S. TROTTI (2005)
GEORGE WASHINGTON TRUETT (1944)
RADOSLAV ANDREA TSANOFF (1976)
EDWARD BLOUNT TUCKER (1972)
WILLIAM BUCKHOUT TUTTLE (1954)
FRANK E. VANDIVER (2005)
THOMAS WAYLAND VAUGHAN (1952)
ROBERT ERNEST VINSON (1945)
LESLIE WAGGENER (1951)
AGESILAUS WILSON WALKER JR. (1988)
EVERETT DONALD WALKER (1991)
RUEL C. WALKER
THOMAS OTTO WALTON
FRANK H. WARDLAW (1989)
ALONZO WASSON (1952)
WILLIAM WARD WATKIN (1952)

ROYALL RICHARD WATKINS (1954)
WALTER PRESCOTT WEBB (1963)
HARRY BOYER WEISER (1950)
PETER BOYD WELLS JR. (1991)
ELIZABETH HOWARD WEST (1948)
CLARENCE RAY WHARTON (1941)
JOHN A. WHARTON
WILLIAM H. WHARTON
JOHN ARCHIBALD WHEELER (2008)
WILLIAM MORTON WHEELER (1937)
GAIL WHITCOMB (1994)
JAMES LEE WHITCOMB
FRED N. WHITE (2006)
WILLIAM RICHARDSON WHITE (1977)
C.G. WHITTEN (2001)
WILLIAM MARVIN WHYBURN (1972)
HARRY CAROTHERS WIESS (1948)
DOSSIE MARION WIGGINS (1978)
PLATT K. WIGGINS
DAN C. WILLIAMS (2001)
JACK KENNY WILLIAMS (1982)
ROGER JOHN WILLIAMS (1987)
LOGAN WILSON (1992)
JAMES BUCHANAN WINN JR. (1980)
STUART WOLF (2005)
JAMES RALPH WOOD (1973)
DUDLEY KEZER WOODWARD JR. (1967)
WILLIS RAYMOND WOOLRICH (1977)
BENJAMIN HARRISON WOOTEN (1971)
SAM PAUL WORDEN (1988)
JOSEPH IRION WORSHAM (2008)
GUS SESSIONS WORTHAM (1976)
LYNDALL FINLEY WORTHAM
FRANK MCREYNOLDS WOZENCRAFT (1993)
FRANK WILSON WOZENCRAFT (1967)
WILLIAM EMBRY WRATHER (1963)
ANDREW JACKSON WRAY (1981)
CHARLES ALLEN WRIGHT (2000)
RALPH WEBSTER YARBOROUGH
RAMSEY YELVINGTON (1972)
HUGH HAMPTON YOUNG (1945)
SAMUEL DOAK YOUNG
STARK YOUNG
HENRY B. ZACHRY (1984)
PAULINE BUTTE ZACHRY (1998)