MIDCONTINENT PERSPECTIVES

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Current Trends In The Construction Industry

In May of 1981, I was privileged to appear on this program to present an insider's view of the construction industry. At that time our national economy, and construction in particular, was in the doldrums. Today our metropolitan region is exploding with activity, and announcements of new future projects signal a continuation of the same for the next two years.

What has happened to cause this change? In my opinion, it can be summed up in one word: confidence. This confidence has been generated by a drop in inflation from double-digit figures to approximately 4%, a drop in prime rates of interest from 22% to less than 11%, and a drop in unemployment to less than 7%. It is also encouraging to note that the gross national product, even after being adjusted by inflation, had a real growth of 5% in 1984. One cloud looms on the horizon and that is our massive federal deficit in excess of $200 billion per year. At some period this could push interest rates up sharply and stifle growth and we would be presented with the same set of conditions that we had in 1981.

We should not be lulled into euphoria. There are some sectors of our economy in real trouble. A record number of failures have occurred in agriculture with a ripple effect on lenders and farm implement dealers. A glut in oil and gas has had a disastrous effect on a large part of the energy sector. Deregulation has been a mixed bag for the airline industry, and an aroused public, focusing on cost containment, has caused a rethinking of the health care industry. Banks and savings and loans continue to share the headlines with their financial woes, and we cannot continue to ignore our balance of trade deficits.

With that general background, let's zero in on the construction industry – an industry which through planning, design, construction, maintenance, and repair transforms resources of materials, labor, equipment, technology, capital, and land into constructed facilities. As noted in my earlier talk, these constructed facilities fall into three categories: residential building, nonresidential building, and non-building.

Residential building, which includes both single-family and multifamily housing, grew from a volume in 1980 of $63.1 billion to $100.8 billion in 1984. Nonresidential building, which includes schools, hospitals, churches, offices, shopping centers, manufacturing plants, warehouses, and distribution centers, grew from a volume in 1980 of $52.3 billion to $73.2 billion in 1984. Non-building construction, which includes roads, bridges, railroads, dams, sewers, water, gas, oil, power, and communication facilities, had a modest gain from $31.6

billion in 1980 to $35.9 billion in 1984. When one takes into account inflation, there really has been a net loss in non-building construction.

All of the above figures have been generated by the F. W. Dodge Division of McGraw-Hill Information Systems. When you combine all three sectors of the construction industry, you will note an increase in total volume from $147 billion in 1980 to $209 billion in 1984. This translates to an increase of 43% at a period of time when inflation in the construction industry amounted to 17%, or a real growth factor of 26%. An interesting phenomenon has taken place in the last four years. The consumer price index, as published by the U.S. Department of Labor, has increased by 26%, while the cost of construction has increased by only 27%. This is in sharp contrast to the period from 1970 to 1980 when the consumer price index rose 112% and the cost of construction grew by a whopping 151%.

Is there an answer for this reversal of trends? It probably relates to the first law of nature – self preservation. Back in 1981 when I addressed you, I pointed out that the construction field labor force was 40% unionized and shrinking in union activity. An enlightened union and management leadership realizes that businesses do have a choice on where to expand or relocate their operations. One of the business criteria for either expansion or relocation is the labor climate in the area of choice, and those regions with good labor relations and high productivity will continue to get the nod when final decisions are made. Average construction union wage increases in 1984, on a national basis, were less than 1%, which again is unusual. In addition, there were changes in work rules that will make labor much more productive.

The construction industry continues to be cyclical in nature. As I previously pointed out, all three sectors have not enjoyed the same success the last four years, and the non-building sector has been lagging considerably behind the residential and nonresidential sectors. It is not uncommon, even today, to find peaks and valleys in the same state. Texas is a typical example; some parts of that state are very active and other parts are in the doldrums. At the same time, there are many parts of Florida that are vibrant with construction activity, particularly the central and northern part of the state, but the housing sector in Florida is in a real crisis with about one buyer for every 40 units that are for sale. States like Oklahoma, with strong ties to the energy industry, have minimal construction activity at this time and are in an entirely different set of circumstances from what this metropolitan region is experiencing. The Sun Belt continues to be extremely active, but, strangely enough, in 1984 the percentage of increased activity was greater in the Northeast and the Midwest.

Although the health care industry is going through some soul-searching because of heavy emphasis on cost containment, it still experienced a busy year in 1984. There was only a modest addition of hospital beds, but there was a considerable amount of construction of ancillary facilities, such as medical offices, outpatient units for physical therapy, cardiac rehabilitation, surgicenters, and nursing homes. New hospitals and additional beds are being constructed only in high growth areas or where required by obsolescence of existing facilities.

The advent of computer technology has resulted in some new construction of manufacturing facilities that require an atmosphere many times more sterile than a hospital operating room. The air is moved and purified by an elaborate design of filters and air handling units. Computer facilities are being constructed in increasing numbers, and the computers must be kept operational in the event of power failure. Temporary power is being maintained by a backup system of batteries and generators. In one recent case, the TWA worldwide reservation

center, whose computer facilities we were privileged to build a few years ago, stayed on temporary power for 14 days when the primary power malfunctioned. The nice thing about it is that the temporary power was available when they needed it.

Kansas City, as you are well aware, like many other major cities, is undergoing a renaissance of its downtown area. Many of the older and historic buildings are being preserved and renovated. Demolition of other buildings is providing the space for hotels, offices, and retail facilities. In many cases, the new architecture is departing from the impersonal rectangular buildings that had little character to a return to a skillful blending of such materials as granite, marble, and glass. Much attention is being given to warmth, character, and elegance on the exterior and to public spaces in the interior.

The population explosion of the 1950's is now providing a considerable segment of our population with needs for housing, shopping, offices, and recreational facilities. However, an ever-increasing segment of our population is growing older and having a different set of needs, such as retirement centers and nursing homes. Demographics will exert considerable pressure on the supply and demand for future construction activities. There will also be a considerable demand to maintain, modernize, and upgrade our present facilities, whether they be roads, bridges, utility plants, manufacturing facilities, schools, or apartments. For the remainder of this century, construction will be a significant part of our economy. New technology is something that we will continue to see coming on the scene in construction, whether it be in new materials, new methods, new equipment, or new concepts. We continue to see many of the new office facilities with raised floors that present flexibility for power and communication. We have seen, in recent months, the slip form procedure that is being used on the AT&T project downtown. To my knowledge, it was the first time that that concept has been used in this area, but I think that all of us were surprised at how quickly 38 floors of the central core of that facility were constructed through the use of the slip form concept.

Although materials, equipment, and systems will continue to change through new technology, the basics of construction will remain – namely the need to construct quickly and economically without sacrificing quality. In my earlier talk, I put a great deal of emphasis on the team concept of owner, designer, and contractor, and this has worked exceedingly well in the private sector. I realize the public sector has a different set of legal problems and in many cases is still using the concept of selecting a design team, letting it come up with a complete set of working drawings, and putting the job out to bid for anyone who can come up with a bid bond or performance bond. Unfortunately, that procedure, as the private sector has recognized, places very little emphasis on what we call the value engineering/cost design approach, where all the bits and pieces that go into a building are very carefully analyzed by the members of the construction team with the multiple choices that the designer and the owner have to make in order that the owners are getting maximum bang for their buck. This approach can normally take about 15 to 20% out of the cost of the project and still the owner ends up with a quality project. It is a technique that has been developed and it has worked very well. Time is also of the essence and many of the owners are getting very sophisticated on how many dollars it takes to build their facility after the value engineering takes place, what the savings in time will be if the project is completed earlier, and if there is a tenant available or the owner is available to move into that project.

The items of cost and time unfortunately remain the big factors as far as most owners are concerned. I think the time has come for the owners to ask the contractor and the design team not

just what the cost is and how quickly the facility can be built, but also, "Let's see your quality control program and your quality assurance program." This is coming more and more to light in this industry which is fraught with construction claims to discover who is at fault. In many cases the shotgun approach of suing everyone in sight and hoping that in that net they get the culprit is being used. Problems can occur in this industry through either defective materials, defective workmanship, or defective design. It has been a paradise for lawyers because of the amount of claims and the amount of problems. I feel very strongly that there needs to be emphasis on both issues, quality control and quality assurance. Quality control is the primary responsibility of the contractor, who must make certain that the designed product is exactly what was designed – in other words, that there is no deviation in quality or in design. That is the problem of the contractor, but I think there needs to be a secondary responsibility of the designer and the owner. Quality assurance is the primary responsibility of the designer and secondary responsibility of the contractor and the owner. Quality control is needed to assure that a project is constructed in strict accordance with the plans and specifications. Quality assurance is needed to make sure that the end product performs in the manner that the owner expected.

Problems can arise in the construction industry through faulty materials, faulty workmanship, or faulty design. A good quality control program will prevent flaws of workmanship or materials. A good quality assurance program will detect design flaws before they occur. Owner, designer, and contractor should be keenly interested in both quality control and quality assurance.

We live in a suing society and it is good insurance for all three participants to be concerned and to participate in quality control and quality assurance programs. Procedures, certifications, testing, monitoring, and reporting will verify that quality control has been achieved. It will also require the use of independent laboratories and consultants.

Quality assurance to detect design flaws requires independent consultants, plus the in-house expertise of the contractor, subcontractors, and material suppliers. It is much easier and much less costly to remedy the problem before it occurs. We make it a standard operating procedure to hire independent consultants to review the designs. These may be soil consultants, consultants in aerodynamics, structural consultants, masonry wall consultants, window-wall consultants. All of these people are needed for a second look. We insist that our in-house supervisors, subcontractors, and material suppliers play the role of devil's advocate. A team approach to quality control and quality assurance will go a long way toward eliminating problems and the litigation that can result from them.

In conclusion, the construction industry will continue to present opportunities and rewards interlaced with high risks, problems, and challenges. It is a dynamic industry with constantly changing technology that demands a continuing education for all of its participants. There is no room for complacency in an industry that is subject to peaks and valleys. On the other hand, you will never find a more representative cross-section of people possessing the attributes that have made this country great!

I thank you for the opportunity to be with you today.

QUESTIONS AND ANSWERS

QUESTION: What is the slip form?

ANSWER: Most of you are familiar with the grain silos that you see around this area. The slip form uses a hydraulic jacking system for the wall forms like those on the AT&T project. They are constructed approximately two stories high. People are working on three platforms – the top, the middle, and down at the bottom. We worked two shifts. The second shift, which is the night shift, places the reinforcing steel and prepares for the concrete pour that will take place on the day shift. Once that pour starts, the entire structure that contains the form is raised about three feet per hour over a four- to five-hour period. It's the same procedure that we use on climbing cranes, where we use hydraulic jacks that raise the crane up 40 or 50 feet. That is usually done on the weekends and it normally can be done in a five- or six-hour period. The slip form is something that was really foreign to building and was adapted from the grain elevator concept where the slip form has been used quite successfully.

QUESTION: On the subject of restrictive work practices where a person could do only one process, whether it be the carpenter who was nailing the nails or sawing the wood, has there been anything done to have more people available to do the same thing or interchange?

ANSWER: There has been considerable progress in that particular function. Take the glass and glazing industry. Where a few years back it was all handled by the glaziers, now it is a combination of glaziers and ironworkers. We see composite crews where the same people really are overlapped, doing the same thing. I think that the union program itself came to the stark realization that it had some multiple problems when it saw that the entire country was going the nonunion way. We have seen in the last four or five years almost a reversal of those attitudes. We see an enlightened union leadership that is working hard, and I am very pleased with the productivity, in most cases, that we see in our region.

QUESTION: Is there sufficient insurance on construction projects?

ANSWER: I am probably going to have to distinguish here among what we call a builder's risk-type insurance, which covers the perils of tornadoes, fire, and things of that nature; worker's compensation insurance, which takes care of the person who is injured on the job; and public liability and property damage insurance, which is used when the public in general incurs bodily injury or sustains property damage. We do see overlapping. Our company probably subcontracts 70% of its work and we do about 30% with our own forces. That is probably high in this region because many contractors do very little work with their own forces. Each one of those subcontractors is required to provide insurance certificates, which are set up to hold the owner and designer harmless in the event of problems that are occasioned by either the contractor or subcontractors. In addition, it is pretty much standard practice to have a large umbrella of coverage, which picks up the amounts that are over and above the limits that are normally set. We rarely see limits on subcontractors, for example, being set over $500,000 to a $1 million, and we have a standard practice where we have an umbrella that goes on top of that that may take coverage up to $50 million and sometimes up to $100 million.

QUESTION: What are some of the procedures available to see that early completion of construction projects is obtained?

ANSWER: One thing that has occurred since 1970 is the team approach of owner, designer, and contractor with the negotiated contract. With preliminary plans in the design and development stage, which means about 40% complete, you can get very accurate pricing, but you cannot build the building. Once that guaranteed maximum price has been achieved, we can

work on the fast-track-type process in which the designer provides the contractor with working drawings on a timely basis to stay ahead of construction.

We also feel very strongly that there is a need for critical path scheduling and putting down on paper the earliest route that you can get from start to finish and this applies to the design team. This information needs to be made available to the owner because many times owner decisions, or lack of decisions, can hold up the entire process. We determined, a number of years ago, that we needed to have in-house critical path scheduling, and we are very fortunate to have a department of that nature. We try to make it very simple, so that it is easily understood by the subcontractors, the material suppliers, and the workers on the job. It is such attention to detail that will finish jobs earlier.

Many times you can accelerate completion if you see the need to go to shift work – a night shift in addition to the day shift. Selective overtime is another method to accelerate completion and we sometimes have to use that approach. We have regular meetings, on a weekly basis, on major projects in which we point out problems that might impact the schedule. Reports are generated after those meetings. There is a team atmosphere where the schedule that once looked impossible all of a sudden looks achievable; scheduling is drawing more and more attention. At interest rates of 10 to 11%, finishing a building a month earlier is of great, importance. Within the last year or so, we did a lot of work for what is now called AT&T Technologies at the old Western Electric plant in Lee's Summit. They made a substantial commitment of money for that project and they determined that every day saved in completion was saving them many thousands of dollars. Fortunately, everything fell into place, but it was a continual battle to meet schedule.

QUESTION: Do the public sector and the private sector take into account the fact that there should be considerable emphasis on the quality of the project?

ANSWER: Unfortunately, I think that decisions are still made on price, and price alone. We were delighted to work with the City of Kansas City, Missouri, on a quality control and quality assurance program at the new Vista Hotel and it worked extremely well. One thing that has come on scene in recent years is the use of a mockup for building a section of a wall, including the window, to determine whether there are any flaws in the design. Fortunately, this was initiated on the Vista where a section of wall similar to that of one of the rooms in the tower was built in a laboratory in St. Louis and subjected to downpours and 100-mile-an-hour winds. It detected design flaws in the flashing and they were corrected.

QUESTION: What is the potential for overbuilding in the Kansas City region, with reference to what has happened in Houston where there are many millions of square feet of office space sitting idle?

ANSWER: I personally feel that that is always a possibility. As I mentioned earlier, confidence seems to have brought back the construction industry as well as the economy. I think that having too big an appetite, though, can get any of us into problems. Some two years down the line there is going to be a tremendous amount of office space on the market, and let's hope that Kansas City has grown sufficiently to absorb it.

QUESTION: Are there enough skilled craftsmen to handle the amount of work that is envisioned for the Kansas City area?

ANSWER: Although I don't think there has been a formal announcement of the General Motors plant, everyone seems to read between the lines that the plant will be constructed in Fairfax, and it will be a fast track project. Many millions of dollars will go into it, and it will have to be built in a short period of time. Fortunately, in this region today, although we are approaching a maximum set of circumstances as far as skilled craftsmen are concerned, there is a very active apprenticeship program to provide the manpower. Manpower statistics are being generated and the region within 250 miles of Kansas City is not too busy, so there will be travelers who would be very happy to come into the area to fill the gaps as they are needed. I don't anticipate a big problem, but some shortages are going to show up this summer.

QUESTION: Is the age of the work force continuing to get older, and is it being replaced by the younger people?

ANSWER: If you had asked me that question about 10 years . ago, I would have said there is a real problem because the unions were very restrictive at that time in allowing new members. Today, to the best of my knowledge, when they recognize there is the need, their apprenticeship programs are very active and are very good. We feel that the newer, younger workers who are appearing on the scene are going to be a very good balance wheel for the ones who are going to be retiring from the scene.

QUESTION: Is there a formal retirement program for union craftsmen?

ANSWER: The union leadership in the construction industry has probably looked at but not addressed fully what happens when a worker reaches 65 or 70 years of age. Outside of Social Security, many of these unions do not offer the types of pension benefits that should be out there. We continue to see improvement. One area that is of concern is the wage continuation program for an injured employee. If the employee just goes on disability and receives X number of dollars from the state, which is minimal, a tremendous amount of hardship is put on that employee. We recognized that in-house many years ago for our field foremen and supervisory employees. It is not that expensive and I am surprised that the unions haven't included that in their bargaining package. I don't think the construction industry has the degree of pension or retirement benefits that some of the other industries have. It is a problem that needs to be addressed.

QUESTION: Is there a problem in obtaining building permits on a timely basis?

ANSWER: It continues to be a problem because of the greatly increased volume of activity. I feel that Jerry Jones, who heads up the Building Department's permits and building code enforcement, is a very qualified individual who is concerned with the problem. It is something that needs continuous monitoring and can be a real sore spot if there is not quick turnaround time. There have been horror stories in recent years in which people have waited for months to get a building permit. We don't think permits should be issued like picking them off the shelf. We think the building code enforcement people need to know why they are issuing permits and there is a period of time that is reasonable.

William H. Dunn is president and chairman of the board and chief executive officer of the construction firm founded by his father, the late J.E. Dunn, in 1924. For the past 15 years this firm has ranked among the top 400 construction contractors in the nation, operating primarily in the Midwest.

After serving as a naval aviator in World War II, Bill graduated from Rockhurst College with a bachelor's degree in mathematics and physics. Since then his entire career has been with the J.E. Dunn Construction Company. Besides being responsible for all company operations, he oversees the Tulsa regional office operations.

Bill is co-chairman of the Kansas City Area Economic Development Council and the Labor Management Council, vice president of the Builders' Association of Missouri, recent past president of the Greater Kansas City Associated General Contractors, and a member of the Executive Committee of the Downtown Council. He is past president of the Greater Kansas City Chamber of Commerce and was named Mr. Kansas City 1982 by the Chamber. Among his civic responsibilities are membership on the Civic Council of Greater Kansas City and director of the Kansas City Association of Trusts and Foundations, Greater Kansas City Community Foundation, and the Lakemary Center. Bill is on the Executive Committee of the trustees of Midwest Research Institute.

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MIDCONTINENT PERSPECTIVES was a lecture series sponsored by the Midwest Research Institute as a public service to the midcontinent region. Its purpose was to present new viewpoints on economic, political, social, and scientific issues that affect the Midwest and the nation.

Midcontinent Perspectives was financed by the Kimball Fund, named for Charles N. Kimball, President of MRI from 1950 to 1975, Chairman of its Board of Trustees from 1975 to 1979, and President Emeritus until his death in 1994. Initiated in 1970, the Fund has been supported by annual contributions from individuals, corporations, and foundations. Today it is the primary source of endowment income for MRI. It provides "front-end" money to start high-quality projects that might generate future research contracts of importance. It also funds public-interest projects focusing on civic or regional matters of interest.

Initiated in 1974 and continuing until 1994, the sessions of the Midcontinent Perspectives were arranged and convened by Dr. Kimball at four- to six-week intervals. Attendance was by invitation, and the audience consisted of leaders in the Kansas City metropolitan area. The lectures, in monograph form, were later distributed to several thousand individuals and institutions throughout the country who were interested in MRI and in the topics addressed.

The Western Historical Manuscript Collection-Kansas City, in cooperation with MRI, has reissued the Midcontinent Perspectives Lectures in electronic format in order to make the valuable information which they contain newly accessible and to honor the creator of the series, Dr. Charles N. Kimball.