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ENGINEERS:
George Hanson of Sallada & Hanson

GENERAL CONTRACTOR:
Harold Simpson

MASON CONTRACTOR:
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Before the Vol. I—No. 1 issue of Symposia went to press—the Watersaver Company had a helicopter flying above Denver's Stapleton International Airport—purpose: pictures for the Watersaver advertisement. It appears again this month, in two places. In the Watersaver ad—see back cover—and in the feature "Anchorage for Eagles". This "eagle's eye view" was planned and procured by Mr. Jay Slifer of the Watersaver Company and has been chosen by Mr. Ben Bezoff and his associates as the "official" picture of Denver's Mile High Anchorage.

Dr. Lloyd M. Joshel, General Manager of the Rocky Flats Division of the Dow Chemical Company, has announced the appointment of Charles M. Love, Jr., to the position of Manager of Industrial Relations.

ABC has made the following appointments to Boards and Committees. Robert O. Howell (James R. Howell & Co., Inc.) Representative on the Board of Trustees, Bricklayers Health and Welfare Fund.

Dean R. Weaver (Weaver Construction Co.) Representative on the Board of Trustees, Operating Engineer's Joint Apprenticeship and Training Fund.

Tony Pavelka (Walt Flanagan & Co., Inc.) Cement Mason's Local 577—Joint Apprenticeship and Training Committee.

Bruce Hughes (B. H. Inc. of Colorado Springs)—Board of Trustees Carpenter's District Council of Southern Colorado—Retirement Fund Plan.

The Very Reverend Richard F. Ryan has been made chairman of the Denver Planning Board . . . a nine-member citizen committee that serves without pay. Father Ryan, President of Regis College since 1953, brings to the Planning Board an enthusiastic approach to city planning in all its many complex aspects.
The members representing management include Lewis, Carl De Temple of Denver, executive secretary of the Colorado Association of Commerce and Industry and Herman F. Alvord of Denver, employee benefits manager for Colorado Fuel and Iron Corporation.

Labor representatives are Donald Sutton of Denver, business representative of the Warehouse and Distribution Employees Union Local 452; Fred Waggoner of Denver, business representative of the International Association of Machinists and Aerospace Workers; and George Wetterberg of Denver, Business Manager of the Northern Colorado Building Trades Council.

Appointed to represent the public were Sen. Paul E. Wenke (R-Ft. Collins); Walter Uphoff of Boulder, director of labor education at the University of Colorado; and Dr. Floyd Bralliar of Denver, president of the Rocky Mountain Academy in Industrial Medicine.

**ABC SALUTES PAST PRESIDENTS**

September 6 is the date set for the Semi-Annual Combined Membership Meeting for the Associated Building Contractors, Inc. Traditionally, "Past President's Night," this year's September gathering in the Grand Ballroom of the Brown Palace Hotel will have an excellent program which has been arranged by the Associate Members. For many, many years, Harry Hickey and the "Head Table" have become almost synonymous. Mr. Hickey, long-time Chairman of the ABC's Associate Membership, has retired from his position with Francis J. Fisher, Inc., and has resigned his office as Chairman. However, "as a special attraction," the genial Mr. H. has agreed to handle the MC's duties for this joint meeting as a "going away present to the ABC of Colorado." Approximately two hundred of Harry's friends will be there to see him preside at the "head table."

New Chairman of the Associate Membership is Mr. Forrest J. Jensen (Symons Manufacturing Company). Filling the position of Vice Chairman is Herman Rask (Denver Wood Products). Mr. Rask was selected for this position by a special committee of five Associate Members. The new Associate Member team is planning a year with a 1.000 batting average. ABC members have big red circles around the September 6th date on their calendars. The Joint Membership will convene for the "happy hour" at 6:30 and dinner at 7:00. Oh, yes, Symposia will be there. See October for the FULL coverage.
A survey recently released by the Associated General Contractors clearly indicates that Big Labor is now BIGGER than Big Business. There is, for instance, a growing trend in the United States to elect, to both the House and the Senate, people who are labor-oriented or who are directly obligated to labor. The graph below shows Members of Congress who are openly supported financially by unions, or who vote a majority of the time for measures supported by unions.

<table>
<thead>
<tr>
<th>Year</th>
<th>House</th>
<th>Senate</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>210</td>
<td>55</td>
<td>50%</td>
</tr>
<tr>
<td>1962</td>
<td>224</td>
<td>56</td>
<td>52%</td>
</tr>
<tr>
<td>1964</td>
<td>267</td>
<td>59</td>
<td>61%</td>
</tr>
</tbody>
</table>

To coin a cliche—shall we all just "throw up our hands in holy horror" or shall we DO something about it. And, why is this happening anyway?

Since Sinclair Lewis created "Babbitt," it has been considered smart and sophisticated to lampoon the American Business Man as a golf-stockinged clod interested only in the crass concern of making money. He has been "the villain" with no thought for culture and no care for his neighbor. In short—he had no social conscience.

After almost forty years of "Babbitry"—a re-evaluation of America's business man is in order. The United States is still, hopefully, a free-enterprise economy where the wheels will not turn without the motive power supplied by the men characterized for so long as "the money-grubbers." Americans might consider—if only briefly—just where in hell we'd be without them... those men with the initiative, the capacity for creative hard work, long hours and the faith in America to risk their capital and create the payrolls.

It is high time the business man stood up for his 50-50 share of the say in government. It's beginning to look in the charts like taxation without representation. We didn't like that in 1776—why should we in 1966!

By the way—are you registered?
Let the Shoemaker Tend to His Last and the Cook to his Kitchen

An architect was retained by a local Board of Education to design a new elementary school. Complete soil tests were made at the proposed building site and the data furnished to the architect's consulting structural engineer. Because the substrata was very soft, the structural engineer drew up three alternative foundation plans for consideration by the architect and the School Board. Without consulting the School Board, the architect chose the plan with the lowest initial cost. He then made a number of modifications, including the elimination of transverse grade beams which were designed to support the slab floor of the School. The architect's reason for eliminating the transverse grade beams was to bring the cost of the project to within the very tight budget established by the School Board. The structural engineer was not consulted concerning the elimination of the transverse grade beams. When the school was completed, the entire structure settled rapidly and unevenly and damages of more than $50,000.00 resulted. It was held that the engineer had properly prepared the original plans. Since he had not been consulted concerning the modifications, he was held free from any responsibility. The School Board agreed to contribute approximately $22,000.00 on the theory that it would have had to spend approximately this amount for a properly designed foundation. The architect was held liable for the remaining cost of $28,000.00.

Points to Note:

1. If the architect feels that modifications are required in the work of his consulting engineers, such design changes should be worked out by the consultants with full disclosure of the effect of such changes.
2. When a choice must be made between budgetary requirements and proper structural or mechanical design, the architect should advise the client of the facts and not permit the budget to control the safety or adequacy of the structure.

Prepared by:
Victor O. Shinnerer and Company, Inc.
Investment Building, Washington, D.C.

Under the auspices of:
The American Institute of Architects Committee on Professional Insurance
LIMITED SCOPE STUDY NO. 1

Developed and issued by:

THE CONSTRUCTION SPECIFICATIONS INSTITUTE
(Denver Chapter)

In an attempt to resolve some of the nuisance problems attendant to bidding and construction specifications in this area, the Denver Chapter of the Construction Specifications Institute has undertaken a study of these problems and is presenting suggested solutions.

The following "Limited Scope Study #1" offers a suggested procedure dealing with the "Approval of Substitutions" portion of the specifications.

PREFACE:
This file has been developed to provide a consistent and acceptable form for submitting a request for approval of substitute items prior to the bid date listed for the particular project. On-the-job changes or substitutions do not fall within the scope of this file. Ideally, this should be handled by direct negotiation between the Architect and the Prime Contractor, with an appropriate change order recording same.

NOTES TO SPECIFIER:
"Open Type" Specifications are preferred by suppliers as more jobs are open to qualified bidders. Owner obtains benefit of more lively interest in the bidding. Specifier must be careful in approving substitutions so as not to compound the work of other related trades.

"Closed-Type" Specifications can result in a captive situation if so identified. This type is very difficult and in some cases impossible to enforce in public work. Be cautious in using it.

ADDENDUM acknowledging approvals should be issued, allowing enough time for approved suppliers and contractors to make their estimates prior to bid date. (3 or 4 days)

LOCATION (in book of specifications):
Include this item within the "Instructions to Bidders." Do not put "or approved equal" in each section.

TYPE OF APPROVAL
Use "Open-Type" or "Closed Type."

TIME & DATE SELECTED
Fill in specific Time of Day and Date of Year for substitutions or
Fill in specific Number of Days prior to Bid Date for substitutions.

SUBMITTAL REQUIREMENTS
To Architect, owner, Engineer
Number of Copies
Return Envelope

DATA:
(a) Title, manufacturer's designation, product description, samples.
(b) Specified material or process for which this is to be substituted.
(c) Technical Data:
   - Physical Performance and Test Data Results
   - Chemical Composition
   - Construction and Finish
   - Physical Dimensions
   - Conformity with Specs. (Include national or industry standards)
   - Local maintenance and service.
   - Guarantee and Bonds.

EVALUATION OF SUBMITTALS:
Addendum acknowledgement of approved items.
Specifier's check list:
(a) Will related work of other trades be affected unfairly by substituted item?
(b) Will access into building be affected by substituted item?
(c) Will delivery time to job be affected?
(d) Is there local maintenance or technical assistance available? Is it reliable?
(e) Does it conform to specs and to codes?
(f) Does space requirements of substituted items cause problems? Weight? Anchorage and connections?

APPROVAL OF SUBSTITUTES
Two forms are suggested below. Use the one that conforms to the policy for the specific project.

FORM A "OPEN-TYPE"
This suggested form can be used with the "open-type" specification where the bidder is not necessarily restricted to the specified items exclusively.

Article Number. APPROVAL OF SUBSTITUTE MATERIAL AND EQUIPMENT.
Where the specifications refer to specific products of one or more manufacturers, such references designate only the quality of materials or equipment to be furnished, and are not intended to restrict competitive bidding.

Material Suppliers or Sub-Contractors desiring consideration of substitute items shall submit to the Architect, prior to p.m., MST on , data showing substance and performance of the product involved, in comparison to the specified items. Data submitted shall show the relevant characteristics of the material to permit the proper evaluation of the submittal.

Two copies of the data and letter requesting such change, accompanied by a self-addressed, stamped envelope, shall be submitted. One copy will be returned to the sender with the Architect's approval or disapproval marked on the letter. All items which are approved by the Architect as acceptable for this particular project will be acknowledged by the Architect in the form of an Addendum. This Addendum will be forwarded to all Prime Contract Bidders and to the Contractors or suppliers approved.

No additional requests for substitutions will be honored beyond the above final date.

FORM B "CLOSED-TYPE"
The following suggested form can be used with the "closed-type" specification where the bidder is restricted to the specified items exclusively.

Article Number. APPROVAL OF SUBSTITUTE MATERIAL AND EQUIPMENT.
Where the specifications refer to specific products of one or more manufacturers, such references designate the materials or equipment to be furnished.

No requests for approval of substitute items will be considered by the Architect.
THE SANTA FE PLAZA

The building still stands. It looks out upon the tree-shaded square from beneath its shadowing portales with wise, old eyes. Can a building remember? There were no trees then—or grass—only the red New Mexico earth pulverized into dust by the padding feet of the Pueblo peoples. Here the horses stood, heads hanging, foam flecked on the flanks from the long ride through El Paso del Norte up the dimly marked road they called El Camino Real. Here, the great wagons creaked after wrestling their way over ten thousand foot Raton pass on the Santa Fe Trail. Here—in this place—the roads met.

Santa Fe has long had a sense of its historic past. Some of America’s oldest buildings are there, and the Governor’s Palace fronting on the Plaza is the oldest capitol building standing—pre-dating the Pilgrims by over a decade. Today, Santa Fe is looking forward, but with a backward and affectionate glance to its yesterdays.

Like many another city, the Santa Fe Plaza, once the hub of its life, has felt the prodding hand of the Atomic Age. Gaunt utility poles support a crisscross of wires, automobiles shoulder each other on the streets, there are glaring signs and shops declining into shabbiness. Recognizing the threat, Santa Fe and its Mayor early this year commissioned John Gaw Meem, F.A.I.A., to prepare and present a program for the revitalization of the Plaza.

Santa Fe is fortunate indeed to have Mr. Meem to project such a study. For many years, he has been Chairman of the Old Santa Fe Association, a consistent force for preservation of the unique character of Santa Fe, and in the development of the Santa Fe Style (Pueblo) of Architecture. Mr. Meem was born in Pelotas, Brazil in 1894, and is a graduate of the Virginia Military Institute. He holds an Honorary Master of Arts degree from Colorado College in Colorado Springs. Now retired from the active practice of architecture, Mr. Meem has had a long and illustrious career. Among his works are: in Santa Fe, the La Fonda Hotel, Laboratory of Anthropology and St. Vincent’s Hospital; in Albuquerque, thirty-three buildings for the University of New Mexico and St. John’s Cathedral and the Fine Arts Center in Colorado Springs.

His honors have been many. They include the Silver Medal from the Pan American Congress of Architects in 1940; the Fellowship from the School of American Research in 1953; First Prize (Institutional) Mountain States Conference, A.I.A., in 1954. Mr. Meem is an Associate member of the National Academy of Design, the National Committee of the Historical Building Survey, a Trustee of the American Planning and Civic Association and a member of the Board of Regents for the School of American Research. John Gaw Meem’s thoughtful study of the Santa Fe Plaza problem tells the story well.
"It is generally agreed that the Plaza, along with the core area of most American cities, has been adversely affected by the tendency of business to move to suburban areas where automobile parking is conveniently available. To produce similar adjacent parking areas within a block of the Plaza is unrealistic in that the surrounding historic areas would have to be practically gutted to produce the necessary space. Parking under the Plaza would be excessively expensive. This leaves the possibility of multi-story parking (not over two stories high), in the parking areas now controlled by the City and eventually this may well be a partial solution. In the meantime, the Plaza is adversely affected by the fact that it is not as attractive as it should be. It is actually shoddy. But if it is to survive as a business center, it must counteract its parking handicaps by being so attractive in itself that it will draw not only tourists, but high-class business as well.

One solution to this problem and one which is being tried out in many cities, is to convert the Plaza area, including the streets or portions of them, into a park or mall, restricted to pedestrians. This has its attractions, but the comment made in the Master Plan that elimination of all traffic may have a deadening effect, should be taken into consideration. The solution herewith proposed is a more conventional one, but is in keeping with the Plaza's long tradition of a small park in the center of surrounding streets on which portals, unifying all the businesses, faced the Plaza.

It is the portals, of noble and ample proportions, which will attract tourists and citizens alike to do business in the Plaza. It is this scheme, which is discussed hereinafter in a more detailed, but still preliminary fashion.

The Streets and Traffic
Traffic around the Plaza to be one-way, counter-clockwise, and originating at the intersection of Lincoln and Palace; parking in the Plaza to be longitudinal, approximately as at present. Palace to be two-way as per Master Plan. San Francisco Street at either end of the Plaza to be closed to traffic, but with no physical barrier such as the proposed landscaped areas shown in the Master Plan, Phase One. The reason for this recommendation is three-fold; 1. There should be uninterrupted access by processions from the Cathedral to the Plaza area. By tradition, the Cathedral should be on the Plaza, but since this is impossible, the one physical link now existing should not be blocked. Parades at Fiesta time could use these narrow entrances into the Plaza. 2. Traditionally, the intersection of Shelby and San Francisco was the entrance into the Plaza, the terminus for the wagon trains coming over the Santa Fe Trail. 3. The narrowness of San Francisco Street, coming into the Plaza at either end is more characteristic of ancient Santa Fe than gardens would be at these locations. A further consideration might well be the availability for fire engines in case of an emergency.

The Portals
This will be the new and dramatic feature around the Plaza. A very fine one already exists in front of the Palace of the Governors, extending the full length of the north side of the Plaza, A lesser, but effective one, is in front of the First National Bank. With these two exceptions, it is recommended that portals be constructed in front of all the other buildings, including J. C. Penney and Co., and Woolworth's, both of whom now have portals, but so shallow
that they are not effective in producing the quality of spaciousness desired.

As to style of architecture, it is recommended that it be Spanish-Pueblo to harmonize with the portal of the Palace of the Governors which was reconstructed in 1909 on the basis of finding a wood capital and post in a wall of the Palace and using it as the prototype for the existing capitals and posts. The majority of the buildings around the Plaza are in the Spanish-Pueblo style with one exception which will be discussed later.

It may be argued that nearly all the early photographs we have showing portals around the Plaza, many of them two-story, are in the Territorial style which should be used. But this is a style brought in by Anglo influence and similar styles exist in Monterey, California and elsewhere throughout the United States. But the Spanish-Pueblo style which existed here for centuries before the Anglos came is a style distinctive of this region and nowhere else. Its use, therefore, would tend to enhance the quality of individuality and uniqueness which the other style would not.

The exception mentioned above is the two-story Catron Building on the north corner of the east block of the Plaza. This is the sole survival of a typical late 19th century brick building with hand carved ornamental stone trim and which is possessed of great dignity. It is recommended that in this case, the portal in front of it be Territorial as being more in harmony with its style. It is also recommended that the portal be extended around the corner on to Palace Avenue, thus forming a charming terminus for the vista southward along Washington street.

To give the portals the required spaciousness and dignity to encourage pedestrian traffic, they should be approximately 10'6" high to the bottom of the beam from the sidewalk. It is believed that this height will, on the average, present the least difficulties for constructing the necessary supports for the cross beams or vigas to be anchored to the walls. The width should be approximately 11'0" from the walls to the inside of the columns. From this point there should be 30" to the outside edge of the curb. This will allow 10" for the columns and two feet for protection of the columns from traffic and for necessary encumbrances such as fire hydrants, parking meters, etc. The sidewalks under the portals and extending to the curbs should be of brick, preferably in attractive patterns, but if this becomes too expensive, then like the floor on the portal of the Palace of the Governors which I believe has stood up well.

Drainage from the portal roofs should go to inside drains against or in the walls and extend under the sidewalks to discharge through the curb. The question of signs is a difficult one. The best solution would be a system of illuminated signs under the portal as suggested in the accompanying sketch. But if signs have to be placed outside the portals, it is recommended that they be placed above and slightly back of the parapets, anchored to the roof. It is further recommended that they be free-standing letters of uniform size, say 30" high, and in the style of letter and color identified with the business.
The Plaza Itself

This tree-shaded area with its flagstone pavement tinged with the fresh green of grass growing between the stones is peculiarly attractive in the summer, and nothing need be done about it except to regulate the trees and vegetation. But in the winter, one becomes more aware of the imbalance and sense of clutter, caused by the proximity of two major structures: The Frontier monument in the center and the bandstand platform between it and the Palace of the Governors. It is recommended that this platform be razed and that in the approximate area it occupies, a flagstone pavement be laid over a concrete base. This area to be used for temporary reviewing stands or other temporary festival structures.

It is further recommended that in place of the Frontier monument, a bandstand be erected as is customary in Latin-American Plazas and as existed in the center of the Plaza before the monument was erected. The removal of so historic a monument is admittedly extremely controversial. So authoritative and knowledgeable a person in matters relating to Santa Fe as Oliver LaFarge is on record as saying that this monument should not be removed under any circumstances. However, a reading of the inscriptions on its sides shows that it was erected by the Territorial Legislature and that therefore it is a State monument. It was erected in the most honored place it could have at that time—in front of the Territorial seat of Government, the Palace of the Governors. As a State monument, it could be moved to an equally honorable place in front of the State Capitol. There is reason to believe the Capitol Buildings Improvement Commission might welcome such a move. For the Plaza, it would result in a symmetrical and more spacious area with a structure at its center which would be both traditional and gay and which would give it both vitality and warmth.

As to the lighting of the Plaza, it is suggested that the present cast iron standards be reactivated with new lamps of suitable design. The inside of the portals should be illuminated with lights concealed back of the beams to light up the store facades under the portals. This light, together with light from the new lamps on the cast iron standards may well give the Plaza all the illumination it needs.

In the late Spring of this year, a progress report and a price estimate on Architect Meem's revitalization program was presented to the Santa Fe Development Committee. Newt Eddy said the estimated cost of building the pueblo-style portals and the redoing of curbing, paving and adding the cross-hatched brick sidewalks came to $66,000. Price of the ten foot wide portals is estimated at $50.00 per lineal foot, plus an additional $50 per lineal foot for the sidewalks. Since all Plaza property owners have indicated their approval of the plan, Eddy explained to the leaders of Santa Fe's business community, "The next step is to set up liaison between the owners and the architect, and go into the design details."

At the time of this meeting, the final plans had not been worked out for the type and size of signs to be used by businesses on the Plaza, but it has been recommended that each store have two—one hanging under the portal, and another on the front. Final word on the status of the Plaza program comes from Foster H. Hyatt, A.I.A., Santa Fe. Mr. Hyatt writes, "The program has been accepted, and the sign proposals are being considered. Final approval is planned for September and final plans will be produced."

So September will bring about another significant date in the long history of one of America's oldest landmarks. Santa Fe's Plaza will say "Buenos dias" to tomorrow without ever having said "Adios" to yesterday.
THE CONTRACT

single  multiple

The ultimate authority on any contract system in the construction industry is not the architect—not the engineer—not the general contractor. Judge and jury is the private owner, the business executive or the public official concerned with the building project. The ultimate aim, no matter how bids are accepted—single or multiple—is identical. All interested parties want to obtain the best possible structure in the shortest possible time and at the lowest possible cost.

The trend to the single contract has been sponsored in the last few years by the Associated General Contractors on a nation-wide scale. A fine booklet on “The Single Contract System of Construction” has been prepared by the A.G.C. and contains a succinct argument for the single contract system of bidding.

For example:

Undivided Responsibility

The single contract places the management of funds for a building project into the hands of a coordinating factor that is . . . the general contractor.

Centralized Responsibility

This effectively provides these results:
• The lowest ultimate cost, based on the guaranteed overall contract price.
• Completion on schedule—avoiding costly delays.
• Quality construction — in accordance with plans and specifications.
• Owner protection — owner is protected against loss from law suits, claims or other encumbrances.
• Safety—Under the single contract there is a uniform safety program which is designed to prevent or reduce accidental deaths or injuries and the financial losses accrued by the same.

This is not theory—the advantages of the Single Contract System have been demonstrated through the years, not only in the United States, but in other countries as well. It is favored by the great majority of architects, engineers, public works officials and private owners.

For instance, officials of federal awarding agencies have testified to their preference for the Single Contract System for the construction of Federal projects. W. K. Wilson, Jr., Lieutenant General, USA, Chief of Engineers for the U. S. Army said recently, “The Army Corps of Engineers has long favored the single contract method of accomplishing construction, wherever possible, in our large Military, Space and Civil Works construction programs. At present, about 95 percent of our total workload is carried out through advertised, fixed-price contracts. Construction has grown to be one of today’s most costly and vital activities, and we must make every effort to assure that it is provided at the lowest price — and on time.”

“The philosophy behind the single contract system helps give us such assurances. Today’s complex construction jobs are the sum of the many specialized types of work which make up each project, and for this reason there must be a single manager who is in control of the entire job and fully responsible to the Government for the successful completion of the contract.”

Equally emphatic on the single contract is James E. Webb who is the Administrator of the National Aeronautics and Space Administration. He has stated that his agency is in favor of any method of contracting that will insure the carrying out of its stated objectives and will provide the greatest return for the taxpayers’ dollar. Mr. Webb says, “Because of the complexity of the work which must be undertaken to put NASA programs into effect, we find it desirable to make a single manager responsible for entire jobs, wherever possible. Where construction contracting is complex and exacting demands are placed upon specialized trades and crafts, centralized coordination and control is a must. The general construction contractor is of great value in integrating the work of all concerned and in assuring completion of jobs consistent with our objectives.”

Similar statements have been made by the Bureau of Yards and Docks for the Navy, the Commissioner of Reclamation, the Procurement Division of the Secretary of Defense Office and the Administration of General Services.

Why, then, is there still controversy regarding the single versus the multiple (separate) contract system. New York State presents a good test area . . . like most states there is a division of authorities—and although separate (multiple) contracts are required by law on projects classified as public works—it is estimated that more than 50 percent of other public facilities are built under the single contract system, since a choice of contract procedure has been made available to the awarding authorities.

Mr. Eugene E. Hult, who is the Superintendent of Design, Construction and Physical Plant for the Board of Education of the City of New York, has made a definitive statement on the “single contract.” Mr. Hult says, “Before coming to the New York City Board of Education, I spent 17 years handling the construction program of the Catholic Archdiocese of New York. It was the largest in the country and I had considerable freedom in using all methods of bidding to get the most for our dollar. I think we used all possible combinations in trying to come up with the most reasonable cost with a minimum of problems in our program. Cost plus, bid depository, prequalified mechanicals, selected general contractors, and their various combinations were used . . . but—it seemed that we always came back to the single contractor who had overall responsibility.”
Following an inquiry by the New York State Investigation Commission on the costs of construction and maintenance of the NYC Board of Education—a report was issued which in essence said: "Throughout the commission's investigation it heard testimony relating to poor coordination of work among the various contractors, with attendant delays and increased costs. Prime contractors would often complain that their highly-paid laborers were idle because another prime contractor or sub-contractor failed to complete his work as scheduled. Consideration should be given to the possible advantage of holding one contractor responsible for the entire construction, rather than dividing responsibility among different contractors, each of whom is a law unto himself."

"It is possible that the general contractor will charge an additional sum for the added responsibility thrust upon him. On the other hand, he may effect such a substantial labor saving by having the job proceed smoothly and completed more promptly that his overall cost may be reduced. From the vantage point of the other contractors, there is definite financial advantage of such a centralized system."

What is our local situation in regard to the single/multiple contract controversy?

Reports of the Joint AIA—A.G.C. Committee have been made available to "Symposia" by D. R. Roggenbach, A.I.A. Chairman of the A.I.A. Relations With the Building Industry Committee. This report has been submitted to the A.I.A., Colorado Chapter, Executive Board. At present, members are being polled for their reactions.

The text of the report follows:
Recent events in connection with submission of construction proposals have increased the concern of the Associated Building Contractors with regard to the status of the Single Contract System of construction. This concern has evidence itself in a request from the Associated Building Contractors that the Colorado Chapter of the AIA go on record as favoring the Single Contract System without reservation.
With respect to this request, I suggest that the AIA Committee on Relations With the Building Industry make the following recommendation:

1. The advantages of the Single Contract System are well established; the system has proved itself in every facet of construction, from lowering total project costs to conserving time and material. Generally, no other approach to the complex problems of construction enjoys a comparable history of success.

2. It must be anticipated, however, that not every project will lend itself to the Single Contract System of construction. A primary obligation of the architect is to secure for the owner the maximum value that may be realized from his investment. Under no circumstances should the architect be restricted in serving the best interests of the owner, including those circumstances where the interests of the owner are served by the establishment of multiple contracts for construction and for the furnishing and installation of equipment.

3. The 1963 edition of the Architect's Handbook of Professional Practice (Chapter 16) contains an objective discussion of the architect's responsibility as that responsibility is shaped by single contract versus separate contract systems of construction. There appears to be no reason for taking issue with the policy established in this document. Therefore, this committee recommends that the following excerpts be made from Chapter 16 and disseminated to the Associated Building Contractors as the policy of the Colorado Chapter of the AIA.

Excerpt from ARCHITECT'S HANDBOOK OF PROFESSIONAL PRACTICE
September 1963 Edition

"Because of its simplicity of administration, the single contract system is the most convenient for the architect, and is generally considered to be the most satisfactory. The separate contract system will result in more work and responsibility for the architect. However, because of established local custom, or for some other reason, many firms recommend and endorse the separate system as being in the best interests of the owner for the savings claimed for it.

"The architect's prime responsibility is to the owner, and his procedure should be, in the absence of contrary statutory requirements, to recommend the system which he believes for the specific project at hand will be to the owner's best interest, initially as well as ultimately. Architects working for a variety of clients both public and private, large and small, frequently find themselves administering construction under both systems at some time or another.

"There are also open to the practitioner certain modified 'systems' which stand somewhere between the two basic methods. Most of these combine certain advantageous features of each system, and they have usually been developed to adjust to certain legal requirements or to eliminate undesirable bid-shopping practices. These in-between systems involve a variety of practices such as pre-bidding of mechanical and electrical work, assignment of specialty contracts to the general contractor on a predetermined basis, and similar devices. In some areas, a system of taking separate bids leading to a single general contract award has proved very successful.

"The architect should receive increased compensation for the additional services he is required to perform where separate contracts are involved. The architect's expense, his burdens, and his responsibilities are much greater here than might be supposed by those not experienced in this contract method. If the separate contract system is badly administered it will result in confusion, delay, annoyance, disappointment to the owner, and loss of time if not of money. In such situations, much of the blame will fall, rightly or wrongly, upon the architect, even though he has no basic responsibility in the contractors' execution of their respective contracts."

Ralph Mitchell (Gerald H. Phillips Inc.), has told us that two excellent publications are available to Symposia readers on the Single Contract. The national A.G.C. publication is titled the "Single Contract System of Construction"; the other was prepared by the Colorado Springs Chapter of the Associated Building Contractors and is titled "Why the Single Contract." Both booklets are graphically illustrated and contain valuable information for any owner, architect, engineer, business executive or public official.

These publications may be obtained by simply writing the Associated Building Contractors, Inc., at 1380 South Santa Fe Drive in Denver, Colorado. As always, we suggest to our readers that "Symposia" means a free exchange of ideas and viewpoints, and we are interested in receiving letters, articles and graphics on any subject which is controversial. If you, the reader, feel strongly on this subject of the multiple/single contract we will welcome your comments.
A New Anchorage for Eagles

Courtesy the Watersaver Company
the premise—

1960: The city of Denver projects plans for a new Stapleton International Airport. It will be bigger—better—and designed to meet the multiplying demands of the Air Age. It will incorporate the existing facilities, and normal air schedules must be maintained throughout the period of construction.

The above high-level decision came after a long period of careful study. Indeed, many of the ensuing problems might have been completely bypassed had an entirely new terminal been constructed on another site. There were other considerations. The existing air-port stood on highly-valuable land within reasonable proximity to the core-city. Denver also had a substantial investment in the existing facilities. The buildings were structurally sound if operationally obsolescent. The premise was established—use during construction and afterward—so premise and problems went hand in hand. This challenge in design and in construction coordination has been met successfully in the years that followed. Mr. Paul Reddy was the architect and motivating force. Since 1963, Mr. Will Grant has been the Resident Engineer implementing the step-by-step procedure and the firm of Hensel-Phelps, General Contractors put brain and brawn together to bring the total project to a successful conclusion.

The second basic criteria was established in 1961 explains Architect Reddy: "This was the decision to build a two-level terminal. There are a few smaller airlines still employing ground loading procedures, and since Denver is the hub which accommodates many smaller communities throughout the area—these smaller aircraft serve a very real need. However, all large planes today load at a second level, and there are many dividends to the two-level design concept. For instance, only airport personnel have access to the aprons which facilitates baggage handling, and the necessary servicing between flights which must be handled with optimum efficiency. The two levels also permit the use of a free-flow system . . . and we feel the Denver airport is doing a good job of this, one of the best in the country. We ticket, load and hold emplaning passengers on the second level. Deplaning passengers are taken by escalator to the lower or ground level to pick up baggage and depart."

General view of work on "C" construction. Steel for columns for "flying beams"—55 feet above apron.
the problems—

With plus twenty years behind him in airport design, Paul Reddy drew up the master plan, a plan that would be fitted together like a giant jigsaw puzzle. Major expansion of the airport building itself was projected eastward which meant Stapleton's old north-south runway would have to go. Three separate projects were accomplished simultaneously. A new north-south runway was constructed. A new control tower was built and completely equipped. A new Air-Cargo building was constructed. Step one was finished. Now, the "fingers" would begin to grow—the "hold" rooms and the docking facilities for the "eagles." The original 12 positions at ground level were expanded to 29 at the second level, and it takes two hundred and three feet for a 'big bird' to turn around. Passengers were still being ticketed and emplaned through the original terminal building, a procedure which was followed until April 1 of 1966. During the period of construction, the architect, engineer and other personnel met regularly with the Airlines Technical Committee. This is where the "problem factors" came together—often headlong. How wide should the corridors be? How many square feet for the "hold rooms"? Just how many barriers would a given passenger have to side-step between automobile and plane? What about office space for the air-lines themselves? "We had to plan for more than passengers," said Paul Reddy. "There is a human factor in air-line travel as well as a technological one. Let's face it—people like to come to the airport . . . "Auntie Mame," we call her, and, as important to today's burgeoning air travel as the planes themselves! "Paul is right there," agreed Will Grant, "because today's visitors are tomorrow's passengers and there is a surprisingly small percentage of people traveling by air today."

"As usual, we had another problem in constructing the new Stapleton Airport," Mr. Reddy grinned. "It's everybody's problem, today. What to do with the automobiles? After all, we're not within walking distance. Our parking facilities now, are almost complete and will accommodate 1800 automobiles on two—and eventually three levels. Already, passengers who use the airport with any regularity know that when you park on the second level—you are on the ticketing and emplaning level—when you park at ground level, you are ready to receive incoming passengers."

"We were extremely fortunate in the construction of the old ticketing wing," stated Will Grant. "This now provides the base for our second level parking, but it had been built originally to take a second story—so with very little engineering complications, we were able to distribute the stress to the already strong bearing columns, and accommodate, the forming and surfacing of the second level parking facility." So, it has been—the answers to the problems—one by one. Today, the remodeling of the old Stapleton Ticket wing goes forward. Within sixty days of completion, you can see the baggage handling facilities being built. Mammoth carrousels will present each bag to the incoming passengers, mammoth carrousels which will enable airport personnel to load baggage on originating or continuing flights. On ground level, these big merry-go-rounds are easily accessible to the ground crew who must see they reach the right plane at the right time. Baggage from incoming passengers is expressed to the lower level on carpeted ramps.

1800 automobiles on two—and eventually three levels. Already, passengers who use the airport with any regularity know that when you park on the second level—you are on the ticketing and emplaning level—when you park at ground level, you are ready to receive incoming passengers.

the promise—

"The entire Stapleton International Airport complex has been designed to match future innovations," Paul Reddy promised. "Even the materials specified were used with future expansion in mind. Aviation is a day-today—more tomorrow—operation. This is 1966, yet United Airlines is operating at the projected 1970 level for Denver alone."

With constant change in the criteria, Denver's terminal was constructed of materials which could be removed or substituted. There was light-weight block—most economical—but painted with a vitra-glaze to keep the jet-fumes out—from smudging and darkening the original colors . . . precast stone on the public side, steel, aluminum and glass . . . on the plane side. Always, there has been an aesthetic concept of presenting to Denver's visitors the tremendous cyclorama of the Rocky Mountains to the west of the airport itself. Inside terminal arrangements have engineered traffic flow in three specific directions. The free-flow system calls for emplaning passengers to pass through "ticketing aisles" (see your nearest supermarket). Tickets are checked—baggage is ticketed and expressed on moving-carpeted belts to the lower baggage level—and passengers are on their way in one-tenth of the time taken by other procedures.
The Santa Fe Chapter of the American Institute of Architects is dusting off the welcome mat (a Navajo, of course) to welcome members to the 15th Annual Convention of the Western Mountain Division of the Institute. October 12-15 are the dates underlined on AIA calendars for the conference which has been titled "Design for People." A special slide show on the theme "People," prepared by the Santa Fe Chapter, is scheduled for 11:00 a.m. on Thursday, the 13th of October, in the State Land Office Auditorium.

"Design for People" is all the title implies because it will include in many meetings and seminars—members of the American Institute of Interior Designers who are having their first annual Rocky Mountain Regional Convention in Santa Fe concurrently with the AIA meeting.

Keynote speaker for the convention is Mr. John B. Jackson who is the Editor/Publisher of "Landscape" magazine. The Santa Fe meeting will bring into focus all the meaningful concepts of "People" . . . their cities, their homes, their interior and exterior designs. It is a challenging and decidedly different approach to the average A.I.A. Regional gathering and should be most rewarding to those members who attend.

The many prominent panelists will include Paul Spreigen, Walter Netch, Garrett Ekbo, William Raiser, John P. Corron, Peter Blake, Grady Clay, Harold Spitznagel and William Sheick.

In addition to the "down to business" aspects of the convention, three separate tours are being arranged by Santa Fe architects. There will be a tour of historic Santa Fe, an "aspen" tour and a tour of the mountain villages—all scheduled on Saturday, October 15th. The annual Awards Banquet will be held that same evening at the headquar ters hotel—La Fonda. Pre-registration is, as always, a definite advantage—so AIA members are advised to "get with the program"—"Design for People"—Santa Fe, New Mexico, October 12-15.

INFORMATION, PLEASE . . .
(Note: From time to time, various booklets and publications which are available to the construction community are brought to our attention. These may be of real value to architects, engineers and general contractors, as well as to owners and specifying members of the industry. If you are interested in such publications—and feel such a column would be of value to you—let us know.)

American Institute of Timber Construction—a new manual—now available. This new booklet contains complete design and specification information on heavy timbers and glulaminated construction. For further information or copies of this publication you may contact—Ralph Bacheldor—the General Building Supply Company—Riebe and Bowman or the Wyerhauser Company. All represent glulaminated materials in the area. If these representatives are not presently calling on your firm—address John Burks, Denver-Scope, Construction Specification Institute at 2675 South Colorado Boulevard, Denver, Colorado 80222. A copy of this new publication will be mailed at your request.
In special ceremonies in Aspen, Colorado, on July 29th, Dr. Constantinos Doxiadis, Greek architect and city planner, received the Aspen Award in Humanities. The Aspen Award, a tax free stipend of $30,000, is awarded by the Aspen Institute to honor "that individual anywhere in the world judged to have made the greatest contribution to the humanities." The Executive Committee of the Colorado Chapter of the American Institute of Architects honored Dr. Doxiadis at a small reception held on July 31st at the Brown Palace Hotel in Denver.

ANTHROPOCOSMOS
the world of man

Address delivered at the Aspen Institute for Humanistic Studies On July 29, 1966
Upon the occasion of the Receipt of the Aspen Award

1. Introduction
I was leaving for the airport in Athens when I learned by telephone from Dr. Eurich that I, following a composer and a dancer, had been chosen to receive the third Aspen award—the award which had moved from music through dance to structures; from sound to movement and to "shells." I started to think about the possible links between the three.

First I remembered the dancing steps of the men in Delphi mentioned by Pindar, then the Chinese dancer, who, having climbed the many steps of a temple, told the monks that two steps were missing. When they dug at the base of the staircase the two steps were found. Maybe the connection between man, his music, his movements, and space is an aesthetic one.

But as I drove through congested streets surrounded by man-bearing machines, breathing in their fumes, hearing the noise they made competing for space, I had to admit that my present relationship with space is an economic one, a question of biological survival rather than one of art.

Man and the space surrounding him are connected in many ways within a very complex system. Man's space is just a thin layer on the crust of the earth, consisting of the five elements which shape man and are shaped by him: Nature, in which he lives; man himself; society which he has formed; the shells (or structures) which he builds; and the networks he constructs.

This is the real world of man, the anthropo-cosmos half way between the electron and the universe. It is with this world, and with its relationship to man, that I will deal.

2. From crisis to disaster
With these thoughts I boarded my plane for Benghazi. Once in the air I felt relieved to be away from the city and all its dangers. It had taken me thirty minutes to drive to the airport, longer than it used to take to take an ancient Athenian on horseback. On the other hand I can reach Benghazi in seventy minutes instead of fifteen days, that is three hundred times faster, even though travel in the city is slower than in the past.

From my altitude I could see the city of Athens partially covered by smog, the famous hills wounded by stone quarries, the rivers turned into drains, the blue sea-water striped black with waste oil dumped by ships. We talk about purification, and yes, we do purify the air in our buildings, but we pump the contaminated air into the streets—as was done with sewage in the Middle Ages—to be inhaled next time we walk out to get some "fresh air."

The human society does not operate as it did in the past since natural human contacts are fewer in our cities with increasingly lower densities. Of course we have cars—but not all of us do, certainly not the children who miss their grandparents, and certainly not the underprivileged citizens. Of course we have tele-communications—but how can a telephone replace a father at bedtime, and how can television replace the contact of the two sexes? More and more people pour into the cities and often social or racial elements come into conflict which we are not prepared to face.

We have built larger and taller buildings, but at the same time we have isolated man inside them. Human contact is possible at one level, head to head and feet to feet, not head to feet as in multi-story buildings. We have limited our life, within their sterilized atmosphere, and we have eliminated such natural expressions of it as works of art in the open. The age-old love-affair between man and building is being destroyed in our cities.

We are building modern networks in order to facilitate transportation and telecommunications. But the results we are getting are negative for man—we are arriving at a paradox: The higher the speed of his means of transportation, the longer it takes man to reach the center of his cities. It took man ten minutes to reach it in the
The mind of man carries him into areas which cannot be reached through the senses. So does his soul by way of sentiments, sentiments too are shaping factors.

I cannot forget the peasant on the mountains of Kabylia in Algeria. The talk we had proved how he was aware that it was in his interest to abandon his destroyed village and move to the plain. "Then why do you still live here?" I asked. "C'est un amour," was his answer. Then there was the Cypriot intellectual who explained to me the many reasons why Cyprus should not be united with Greece, then applauded enthusiastically when a speaker defended the Unification. When I asked about it he placed his hand over his heart and said "You forget this."

Body, senses, mind, and soul are only partial aspects of man, but they cannot be separated, they all operate together in health and in sickness. A dancer may find his motivation through stimulation of his senses, or mind, or sentiments. The real link between music and architecture lies within man. The mind can be stimulated through the rhythmical movement of the body walking or swimming. We must not forget the example of the peripatetic philosophers.

Science is beginning to merge the separate images of man that it had set up and see him again as a whole. Common man finds perfection in the complete man. When, for example, one is contemplating marriage, not one aspect of the prospective mate is overlooked. And history demonstrates how in his great eras man believed in developing all his capacities harmoniously.

At present we are at a disadvantage since we have not been studying man properly and have formed no concept of our ideal man. Because of this, man's body and his soul are developing in a non-harmonious way, according to the mind rather than the senses. And even the mind is not developing harmoniously in all its areas but only in some, which are expanding much more than before, while others become atrophic. What kind of creature is this man going to be? The risks we are running by allowing the present trends to continue are very great. We may be turning out monsters without proper balance between their different parts, monsters who may annihilate one another or mankind.

Confronted with such a threat I think we have a twofold obligation: First to study man as a whole, without rejecting anything that he has learned throughout his history unless we can...
Now I turn to happiness, although I know that the mere mention of the word provokes smiles. I beg the skeptics to forgive me but I cannot omit dealing with this aspect of life. Even though some scientists cannot accept this discussion because happiness cannot be measured, it is still happiness that the common man dreams of and which represents the fulfillment of his goals, the satisfaction of his interests. This is admittedly a difficult subject but we cannot work towards man’s welfare unless we understand it. We should not let the existence of the immeasurable stop us from measuring what is measurable. Rather than become involved with the philosophical or metaphysical meaning of happiness, I will proceed to measure it by standard operational methods. Since we speak of “human” happiness, we should measure it according to the quantity of satisfaction felt by man as seen in his different aspects. One can be very unhappy if one’s trousers are too tight, the ceiling too low, or the temperature uncomfortable — also because of other similar physiological reasons. But one can be equally unhappy if the senses suffer — in a room painted red, for example, since one’s eyes are not used to it, or through noise, smell, coarse clothes or bad food. Also through stresses exercised on his mind or soul. Man’s happiness depends on the alleviation of the stresses he is subject to within his social environment or within himself. These stresses can be relieved — there is, for example, the story about the man who always wore tight shoes so that when he’d take them off at home the physical relief would help him put up with an unhappy home life. But man can also learn to enjoy these stresses. As the balance between man and his environment changes continuously, his chances for happiness change too. So what is of major importance is man’s capacity for happiness. This capacity man is either born with — we could perhaps express it by an H.Q. or Happiness Quotient — or acquires or loses by training. A proper science of Anthroplics can develop a scientific H.Q. which will be of the greatest importance to man. By such approaches man can hope not only to alleviate or enjoy stresses, as the case might be, but also to work towards his further betterment, drawing from within himself something better than himself. This can be gradually achieved when he begins to understand how to coordinate his internal rhythm with that of his environment by changing the one or the other. He will have a variety of choices, ranging from harmony with the physical world, matching his footsteps to the pavement slabs, to harmony with nature, swimming along with the waves, to harmony with others, in the rhythmic marching of parades or in work for the amelioration of his society, to harmony with external influences, dancing to a certain tune, to the complete freedom of climbing a mountain or lying on its slopes as it pleases his internal personal rhythm.

When man understands all these he can develop a formula for the lasting happiness of the human man, based on the interplay of man and environment which is a dynamic balance; a happiness which he can reach without endangering the happiness of others.

6. Safety

Safety is a concept just as difficult as happiness and just as indispensable. Civilization started when man first felt safe within his city. Today, for the first time in history since then, he is no longer safe, and this constitutes the greatest problem to be faced by him and his civilization. How can the city be made safe once more?

This question has to be answered through an analysis of all five elements of the anthropocosmos since the neglect of any one would upset the whole system. Nature has to be preserved since without the proper development of all its resources there can be hope for man’s safety. The survival of man depends on his evolutionary resources and on his inborn diversity; consequently he needs a free democratic society which will allow for the survival of the greatest variety of individuals, since we don’t yet know which type is going to lead to a better total human man.

Every single individual must feel and be safe, which means that personal safety within a safe society can regulate personal and group conflicts. The question is—at what cost can this be achieved? A man would be much safer if he never left his home, but he wouldn’t be happy and he wouldn’t develop further. We cannot sacrifice happiness and evolution in the cause of safety, nor safety in the cause of happiness.

So we come to the conclusion that what we need is a safety which can guarantee a basis from which to begin our endeavors toward happiness and the fulfillment of our duties to society. This leads to the concept of a system which will allow for different environments offering all degrees of safety, ranging from the absolute one, if possible, for new-born babies and invalids, to a completely natural environment which young people will have to conquer. ranging from sterilized rooms to jungles.

In such a habitat we can hope for the best balance between controlled and uncontrolled environment which will offer man the maximum safety, and allow the dynamic balance of man and environment which is indispensable for lasting happiness which is the only goal.

7. The new frame

We can now turn our attention to the city of man, but not with preconceived notions about limiting the operation of forces which are independent of man, as people very often do. We must understand that, unlike Utopia, our entopia depends on forces which are dynamic and which are either uncontrollable or controllable only in the long run. It is these forces which create a new frame for the city to come. The dynamic forces of developing humanity show that we must be prepared for a continuing increase of population which may well reach 20-30 billion people by the end of the next century, at which time it may level off. This will mean a universal city, ecumenopolis, which will cover the earth with a continuous network of minor and major urban concentrations of different forms. This means that urbanization will continue, and that

(Continued Page 26)
COLLEGE OF BUSINESS ADMINISTRATION BUILDING

owner: University of Denver
architects: Piel, Slater, Small and Spenst and The Perkins and Will Partnership
genral contractor: Gerald H. Phipps, Inc., Denver
contract amount: $2,000,000.00
completion date: January 1, 1968

COLORADO BANK AND TRUST BUILDING, DELTA, COLORADO

owner: Colorado Bank and Trust Company, Delta, Colorado
architects: Hightower & Chambliss, Grand Junction, Colorado
general contractor: Ray Phipps Construction, Inc.
contract amount: $230,000.00
completion date: October, 1966
eventually farming may be carried out from urban settlements. This also means that the pressure of population on resources will be such that important measures will have to be taken so that a balance can be retained between the five elements of the anthropocosmos in a universal scale.

But, more than with a separate phenomenon, we should be concerned with the survival of man, who, long before the earth has exhausted its capacity for production, will be subjected to great forces pressing him to the point of extinction, forces caused by the elimination of human values in his settlements. If only we realize that at that point the average urban area will have 20-30 times more people and a hundred times more machines, and that difficulties grow much faster than the forces causing them, we will understand that this new frame is going to be inhuman in dimensions.

8. **On the measure of man**

If we understand how far the dynamic forces reach, we will see that our real challenge lies not in changing these historical trends—something we cannot do anyway—but in using them for the benefit of man by shaping this universal city in such a way that not only it will not crush man, but so that it will provide him with a human settlement much better than those of today. In order to do this we have to build the city of inhuman dimensions on the measure of man. We have repeated for centuries that man is the measure of all things—the time has come to put that principle to use again.

We cannot just talk about human scale and human happiness, we have to identify them and attempt to measure them. This can be done since man has, for ten thousand years, been building a great laboratory in which he is both the guinea-pig and the research director. This laboratory we have before us and we have to make use of it. We don’t have to invent the “human” solutions since they already exist—we have to understand them and use them within the new frame.

As an example I will mention that a careful study of the cities of the past proves that the maximum distance from their centers was 10 minutes, and the average one 6 minutes, meaning that people walking for a total of 30 minutes a day could visit the center or other places two or three times. This shows that there was a human dimension influencing social and other contacts, but it also shows one example of how it may be possible to measure a fundamental aspect of the human city—on the basis of the time dimension and not that of physical dimensions since we now have new means of transportation and communications.

The need for such measurements arises from the consideration that in order to build a shell for a snail we have to first know how the snail moves. Building the city of man requires an understanding of the laws governing his movement, not as it is manifested in this present prison, but as it would be ideally.

Up to now measurements in cities have been based on economic criteria, but these define feasibility more than goals. It is time for man to define goals and their feasibility at the same time. Instead of economic abstractions, for all our measurements we must introduce abstractions that combine goals and feasibilities. Man’s most precious commodity, the one which cannot be replaced and which we don’t yet know how to expand, is his own life which is expressed by its length or life-time. This is the basic commodity, as qualified by the satisfaction and safety man enjoys and as limited by economic considerations, upon which our formula for the city will have to be based.

Man, in this case the average American citizen, spends 76% of his lifetime at home (males 69% and females 83%), and 24% away from it. He spends 36% sleeping, 20% working, and 10% eating, dressing and bathing. He is left with 34% or one third of his life, for leisure, pleasure, thought, etc. It is this one third which constitutes the basic difference between man and animal. But males between 20 and 59, have only 20% of free time, of which one-third is spent in commuting. This means 90 minutes; but for some people it means 3 hours or two-thirds of their free time. On the basis of such calculations we can develop a time budget, which is more important than any other budget for man, and estimate how much time each man can afford to spend on each of his activities.

We can then qualify the satisfaction that man gets at every time length. Is it better for him, for example, to walk for twenty minutes, drive in a Volkswagen for ten or in a Cadillac for two hours? We can also try to measure the degree of safety at every time length. In principle then total satisfaction would be the product of time multiplied by satisfaction. A happy life would be the product of time multiplied by satisfaction multiplied by safety. In this way we will arrive at a mathematic formula for happiness.

This does not mean at all that such a formula would be a compulsory one just as no economic formula can be imposed on anyone; nor does it mean that we should confuse the average or normal universal with the individual which after all is our only concern. If we now insert into the picture the factor of economic feasibility for satisfaction, we have the formula of feasible happiness, which is leading to the human city that we can build, our common Entopia which should include all our personal Entopias in a balanced whole, the Entopia which is the common denominator of our feasible dreams.

The goal set by Aristotle, which, at the time, did not need scientific interpretation since all units of space were small and all dimensions human, has now to be achieved by way of new methods which are indispensable for the coordination of the many super-
imposed natural and artificial dimensions into one system.

9. The human city

If we have managed to define human man, natural happiness and reasonable safety and measure them, we can define the human city. It will be very big but it will contain two categories of parts, the cells and the networks. The cells are going to be the size of the cities of the past, no larger than 50,000 inhabitants, no larger than 2,000 by 2,000 yards, no larger than a ten-minute average walk. They will be built on a human scale on the basis of human experience.

The networks are going to be absolutely mechanical and automatic, interconnecting the cells by transportation and communications, forming enormous organisms with the cells as basic units. Their vehicles will reach speeds of many hundreds of miles, their arteries will be underground, not highways but deepways, as they are in the bodies of all mammals—the higher the speed the deeper they will go.

In the cells man will be offered all choices, from isolation and solitude, to very intense participation in social and political life. The fact that we need TV should not lead us to the elimination of the market-place. We don't need only one-way communications, we need a natural human dialogue as well.

The surface of the city will allow the flora to spread again, beginning from small gardens within the cells, to major zones above the tunnels of the networks, to big farming areas and natural reserves where man will find the rough conditions which he also needs.

Society will operate much more efficiently, and people will come together in a multitude of both natural and artificial ways.

Houses will be the natural environment, not formally specified since there the individual will want to express himself. Normal multi-story residence buildings will need much greater areas per floor so that a whole community will be able to operate at each level, a community with its shopping center, playgrounds, and public squares. Automated factories will be placed within the earth, especially in hills and mountains.

Man will be free to move over the surface of the whole city, and even though the buildings will be as pleasant as possible, he will have many chances of walking or staying out without shelter or protection, since his whole organism must be kept fit for all sorts of adjustments that the future may necessitate.

In this city we can hope that man, relieved of all stresses that arise from his conflict with the machine, will allow his body to dance, his senses to express themselves through the arts, his mind to dedicate itself to philosophy or mathematics, and his soul to love and to dream.

10. Epilogue

It has often been said that man may exterminate himself through science. What we must also say is that man's hopes for a much better evolution lie in science which, after all, is the only acquisition of a proven universal value that he can transmit from generation to generation. The whole difference between extermination and evolution lies in the goal that science will set.

Our habitat is the world of man, our goal can only be human happiness and safety leading to the human city. To achieve it we need Anthropic, the new science based on the wholeness of man to help us study and develop him, since we cannot achieve this by simple coordination of his separate aspects. We also need Ekistics to help us study and develop the world of man, the Anthropocosmos. To develop these sciences we have to break the barriers between disciplines. The task is hard but it can be accomplished through proper research and careful selection of those who are to implement it—very few minds can work so synthetically, since it will be required at every moment that they rise above the uni-directional evolution of ideas of specialists to a multi-dimensional one.

The task is hard. People must learn to recognize that they must be very conservative when dealing with man, and very revolutionary when dealing with new systems and networks.

The task is hard since many expect magical solutions overnight or formulas for the immediate solution of the problems; they actually like to talk about sufferings and they do not understand that cities face such acute problems because man does not have a system of values with which to define what a good life is. That is what the city he must build should provide for.

Personally I am convinced that the root of all problems in our cities lies in our minds, in our loss of belief in man and in his ability to set goals and to implement them. This is why I decided today to speak about goals and conceptions, to emphasize that there is where the solution lies.

We can never solve problems and tackle diseases unless we conceive the whole. We cannot build a cathedral by carving stones but only by dreaming of it, conceiving it as a whole, developing a systematic approach, and only then working out the details. It is for this reason that I thought that the Aspen Award money should contribute to the efforts of the Athens Center of Ekistics to study the City of Man.

But dreaming and conceiving is not enough. We have to carve the stones and lift them and this is why I try hard to help build all sorts of cities because we can learn only by building and suffering.

Faced with the practical every-day difficulties I turn to myself and ask whether we can build the human city. My body is beginning to get weaker, my senses, especially my eyesight, do not help me as in the past, but my mind advances in knowledge and sees the confirmation of this possibility, and my soul mobilizes my whole self into a very positive affirmation: Yes, mankind can build the human city.
Phenomenal is not a word to kick around—but certainly it applies to the Albuquerque Chapter of the Construction Specifications Institute. In less than a calendar year, this active and enthusiastic group in New Mexico has grown to almost one hundred members. Symposia is proud to introduce this group to its readers. The following article, written by Mr. Ron Ginn, Architect and Chairman of the Public Relations Committee, tells the story. We have given it the title . . .

THE BIG BABY

In December 1965, Albuquerque was one of the few major metropolitan areas in the United States without a local chapter of the Construction Specifications Institute. Considerable interest in C.S.I. was generated by members of the Albuquerque Chapter of A.I.A. after a presentation by Maxwell Saul, Region 10 Director of C.S.I. and a practicing architect. Following Mr. Saul’s visit to Albuquerque in November, James R. Cushing was appointed chairman pro-tem, the first organizational meeting was held on December 7, 1965, and the name “Albuquerque Chapter” was chosen. By January 1, 1966, thirty-seven applications for membership had been received.

In January, chapter by-laws were officially adopted by the membership, and a competition was held among members to select a name for the chapter newsletter. Architect Art Dekker won a year’s paid chapter membership for his suggestion of “NEW MEXICO SPECS.” A local artist, Jack Barkley, designed the newsletter format which will soon be ready for distribution.

A charter presentation meeting was held late in February with Henry Baume, National President of C.S.I., and Maxwell Saul as featured speakers. At the time of this meeting, more than 60 members had joined the Albuquerque Chapter.

Since February, regular monthly meetings have been held on the third Monday of each month. The program has been devoted to progressive panel discussions of subjects such as the basic definition of specifications and formats, the “OR-EQUAL” clause, prior approval of substitutions, and specific local problems in the building construction industry. Six technical committees have been organized and are actively researching separate subjects.

The interest and enthusiasm for C.S.I. shown by profession and industry in the Albuquerque area is indicated by the current participation of nearly 100 members. The chapter objectives were clearly outlined in the March newsletter by the Chapter President’s letter to the membership: “The sole reason and purpose for the existence of the Albuquerque Chapter, Construction Specifications Institute, is to improve the specifying practices, procedures, and techniques now being used in this area. This objective can best be accomplished by mutual association and cooperation among the members of our chapter who represent all segments of the construction industry. Accomplishment of the objective, even in the smallest measure, will result in benefits to the entire building construction industry. Most important, benefits will accrue to the client or owner, to whom we all owe our best efforts.”

CHAPTER OFFICERS AND COMMITTEE CHAIRMEN
ALBUQUERQUE CHAPTER—C.S.I.
1966 • 67

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Public Relations—R. Ginn, Architect
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Blue Cross-Blue Shield Building
Albuquerque, New Mexico

The building consists of five floors of approximately 6,000 square feet each, with provisions for an additional three floors in the future.
All floors will be utilized by the owner; the lower floor for service functions; the three intermediate floors for general office functions; and the top floor for executive offices, board room and employees lounge—the projections at each windowed end of the building are balconies off these areas.
Each floor is designed around a center core comprised of elevator shafts and two required stairways. East and west walls are solid and north and south walls are virtually all glass.
The structure is reinforced concrete utilizing precast concrete double T’s for the floor construction, thus eliminating free-standing columns. The exterior wall panels are concrete block, coated, along with the concrete columns and beams, with a sprayed-on masonry coating. Blue glazed brick faces the walls of the set-back lower floors on the front and rear and also the walls of the elevator and stair penthouse.
Interior partitions are metal stud and gypsum board construction with prefinished wood paneling in executive areas. Ceilings are 2x4 exposed ‘T’ grid system allowing access to ductwork and high velocity mixing boxes. The mechanical system consists of a double duct high velocity system utilizing air-handling recessed light troffers.
Because of the usual limited budget, the aim of the architects/engineers was to achieve a simple elegance using modestly priced materials and construction systems, and to provide functional and flexible space for the owner.

owner:
Hospital Services, Inc.
Surgical Services, Inc.
architects and engineers:
Ferguson, Stevens, Mallory & Pearl
general contractor:
Bradbury & Stamm, Albuquerque
approximate cost:
$560,000.00
photographs are of the model constructed by the architects for the client.
On page 28 of the June issue of "Symposia"—there was an article titled "Common Sense vs Common Situs—Construction's New Trojan Horse." It was a consideration of the legislative measure known as HR 10027 (the common-situs picketing bill). This measure is in committee, but represents an ever-present threat to all of America's builders, large and small. Senator Peter Dominick (R) Colorado, speaking at a "Ban the Boycott" luncheon sponsored by the Constructive Cooperative Council in Denver—alerted the industry to maintain its militant position on this bill. Pressures from many sources, said Senator Dominick, are being brought to bear and HR 10027 will not remain in committee forever.

In this 1966 election year—Symposia felt an obligation to speak for the Rocky Mountain construction community, and the following query was sent to the Senators and Representatives of the states of Colorado, Wyoming and New Mexico. Our letter follows:

"Although still being held in committee at this time, HR. Bill 10027 (Common Situs Picketing Bill) is of great interest to the readers of Symposia, a new publication for architecture and construction in the Colorado-Wyoming-New Mexico area. Would you be kind enough to state your position on this legislation, for publication. We do not need a lengthy or involved press release, but simply your attitude on this proposed legislation.

"We would appreciate your views on this Bill at your earliest convenience."

Copies to:

Senators: Allott (R) Colorado
Dominick (R) Colorado
Anderson (D) New Mexico
Montoya (D) New Mexico
McGee (D) Wyoming
Simpson (R) Wyoming
Representatives: Rogers (D) Colorado
McVickers (D) Colorado
Evans (D) Colorado
Aspinall (D) Colorado
Morris (D) New Mexico
Walker (D) New Mexico
Rencalio (D) Wyoming

This is to acknowledge your recent letter.
While it is always a pleasure to hear from residents of Colorado living outside of the area which I represent, I am forwarding your letter to Congressman Roy McVicker as a matter of Congressional courtesy for his information.

Sincerely,

FRANK E. EVANS
Member of Congress
Democrat—3rd District
Colorado

Thank you for your letter of August 3 in which you inquired into H. R. 10027.
This bill has been reported by the House Labor Committee and has been pending on the House calendar since September 21, 1965. As yet, there is no indication what action, if any, the House will take in reference to this bill. Until I have an opportunity to study the bill if and when it is approved by the House, I must withhold my comments in reference to it.

Sincerely,

GALE McGEE
United States Senator
Democrat—Wyoming

Regarding your request for my position on H. R. 10027, the Common-situs Picketing Bill, it would be premature for me to make a definite statement on the legislation at this time. The bill is now tied up in committee and will not come up for a vote in this session of Congress. With so many matters demanding my attention at this moment, I really do not have the time to give detailed consideration to a bill which is not now being discussed. Only when the hearings are completed and all the information is in will it be possible for me to make an informed and responsible statement upon the resultant legislation. There are likely to be a number of amendments and modifications so I could not take a stand before seeing the final draft.

Yours,

TENO RONCALIO
Democrat—Wyoming
I have your letter of August 3 discussing H.R. 10027, the common situs picketing bill. You ask me to state my position on the bill for publication. That is a practice which I have long since terminated.

I made a statement when I was a member of the House of Representatives on a bill then pending before one of the committees. It was completely altered by amendments in the committee and on the Floor, and when they finished with it, I opposed the bill even though I had favored the original draft. I told some people I favored it and they asked me a great many questions about my vote against it. That taught me a lesson, and I try to refrain from commenting on legislation until we know the final form that it takes.

Sincerely yours,
CLINTON P. ANDERSON
Democrat—New Mexico

As you probably know, the Chairman of the House Education and Labor Committee has indicated that he does not intend to bring H.R. 10027 before the House of Representatives for a vote this year. At this point, it is difficult to say whether or not the Administration will succeed in getting a bill before either the House or the Senate.

The economic effects of a secondary boycott to a small community are great, and I am unaware of any sound reason for overturning the U.S. Supreme Court decision in the Denver Building Trades Council case, which this bill would do. As you may know, in 1959 I voted for the McClellan Amendment to the Labor-Management Reform legislation, which would have tightened up the Taft-Hartley law on secondary boycotts. Unfortunately, this amendment was defeated. It would appear to me that this measure would undo what has been done in the past to protect the rights of employees, employers and the public from the evils of secondary boycotts in the construction business.

If the Senate is called upon to consider H.R. 10027 in its present form, I expect to vote against it. Thanks for this opportunity to give you my views on this bill, and best regards.

Sincerely yours,
GORDON ALLOTT
U.S. SENATE
Republican—Colorado

I wish to thank you for your kind invitation to comment for publication regarding the proposed common situs picketing legislation which is pending in the House. To answer you directly, I am generally favorable in my attitude towards this measure. I have received a substantial amount of correspondence on this bill and it has all been helpful. I still have a number of questions about the legislation and I am looking forward to a personal conference with a highly respected former Colorado labor leader who is now stationed here in Washington. I cannot find fault with the leadership in the House that is responsible for delaying the consideration of this bill.

Since there is little or no chance that the measure would pass the Senate in this Congress, there would be little value in asking the House members for a commitment at this time.

With best wishes,

Sincerely,
WAYNE N. ASPINALL
M.C.
Democrat—4th District Colorado

This is in reply to your recent letter, asking my position on H.R. 10027, the situs picketing bill. I am opposed to such legislation. It is my feeling that one small local should not be able to stop the work of all other construction crafts whose members have no grievance. Such a practice also could have a serious effect on the cost of construction of many projects in the entire industry.

Kindest regards and best wishes.
Sincerely yours,
THOMAS G. MORRIS
Democrat—New Mexico

---

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R. James Noone
President—CSI—Denver Chapter

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Who wrote the deposit check on the non-existnent bank account?

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SUB-BIDDERS (who may tie-up complete sets longer than required)?
OWNERS (who oftentimes dislike references to "reimbursable expenses")?
CONTRACTORS (who finally get the job... but cannot get enough documents)?

Those of us in CSI are going to hear all of these viewpoints explained and doubtless many vocal criticisms of same at the next Denver-CSI meeting in a panel discussion (Placid), followed by a floor discussion (semi-violent).

Interested nonCSI members are invited to attend the program at 7:30 p.m. on Wednesday, September 14th, at the Engineers Building. Please call the CSI office at 722-3757 for reservations so that we may accommodate the throngs. No charge... you will be the guests of CSI.

If you feel very strongly about this item, please wear your old clothes and check all weapons at the door.
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