

At 7:00pm President Sara Lowman welcomed the membership and invited the members to the 676th meeting of the society and encouraged them to enjoy dinner,



At 7:45pm President Lowman called the meeting to order reminded members to nominate new members for the April membership vote. Guest introductions were made around the tables.

At 7:50pm a ten minute break was announced.

At 8:00pm President Sara Lowman introduced the speaker and topic: "The Astrodome: Building an American Spectacle" by Jim Gast, author of the book by the same name.

The focus of Mr. Gast's talk was the Domed Stadium as an innovation in public space construction. He outlined three specific areas of interest: the people who made the stadium possible, the politics and cultural movements that formed the design and marketing of the building and the technology that made the building possible. He pointed out that the story was not all one of triumphs. Because the building was so innovative, there were elements of the building that didn't initially work, but the failures were dealt with, solved, and made the building a success in Houston and a model that future stadiums had to respond to.

The cultural and political times affected the Astrodome from the beginning. Even though Houston was emerging as a metropolitan city in the 1960's, it still had the sense of a frontier place. The astronaut / space race and the cold war affected the naming and the marketing of the building. The baseball team name was changed from the Colt 45's (a past focused - frontier allusion) to the Astros (a future oriented allusion). The Cold war and the perceived need for bomb shelters provided a possible use for the underground levels of the stadium as a refuge from attack. The Stadium opened as an integrated venue for all Houstonians and was part of creating public spaces open to all.

Gast began by pointing out that Houston has a history of large projects designed and constructed in record time. In 1928 Jesse Jones had the Colosseum built in 60 days to meet national convention deadlines to put Houston on the map of potential convention site cities. Lloyd & Morgan and Milton McGinty designed and built Rice Stadium in 11 months. Colt Stadium was also built with a shortened construction time. The Astrodome was built by Houstonians, all of them Rice University graduates.

Gast then outlined a short history of long span construction beginning with stone construction. The Pantheon in 100 AD has a 142 foot span. Florence built the Duomo in the 1400's with a larger span. But the steel constructions of the 19th century really set the precedence for long span construction. The London train stations of St. Pancras and the Broad Street shed of 243 feet and 300 feet, respectively, began the march to longer and longer spans. International exhibits also had long span structures. By 1889 one of them reached 364 feet. Airplanes and dirigibles began to need hangars with long spans in the early 1900's. Football could get by with 300 foot spans. But none of these spans could hold a baseball game which needed more space and height for fly balls.

By the 1950's sports venues found they needed to compete with television. Norman Bel Geddes began sketches for an enclosed baseball field in 1948-1949. It was to have amenities such as shopping venues, places to fix a car, and a theater. Buckminster Fuller designed a geodesic dome for Baton Rouge in 1958 that was going to have a 384 foot span. In Houston, Glen McCarthy tried to cover a football field in 1949. Expansion of the baseball franchises was a topic of public discussion in the 1950's. There were no teams west or south of Kansas City. George Kirksey and Craig Cullinan began the effort to lure a baseball team to Houston. Talbot Wilson, S.I. Morris, and Ralph Anderson began site studies on three sites in 1958. The Memorial Park study included designing a stadium that could hold both football and baseball games, as the final design for the Domed Stadium provided.

R.E. Bob Smith and Judge Roy Hofheinz began conversations with Buckminster Fuller on a 1600' air conditioned mall for Houston. When that fell through, Hofheinz asked S.I. Morris to enclose a baseball stadium. He said he would do it. In 1960 a model was commissioned to be sent to the National League in the bid to get a baseball team in Houston. Eventually three bond issues would be required to finance the building. Full page ads for and against the bonds appeared in the Houston papers. In the end, three bonds were required to pay for the Domed Stadium as the price rose during development and construction of the building.

There were three technical issues and a horticultural problem the building had to solve: it must have a 600 foot clear span, it must control sound inside the dome, it must be air conditioned and it had to grow grass on the playing field. Requests for proposals were sent out for structural solutions to the design. Kaiser Aluminum responded with an aluminum structure, a wooden dome design was also submitted. G.R. Kiewitt won the contract. The design was for an exposed structural solution with hard skylights which would create an unacceptable acoustical environment. A solution with 4,596 skylights with acoustical material between the lights was proposed as a solution. I.A. Namen was commissioned to solve the air conditioning problems. The air needed to be cooled, it needed to allow enough humidity to allow the grass to grow, and it needed to clean the air of cigarette smoke since smoking in public facilities was still allowed. Also air needed to be delivered to the center of the field.

The last problem was being able to grow grass inside the dome. This required skylights which allowed bright light to hit the field. This caused vision problems for the outfielders as they attempted to catch fly balls. The glare from the skylights caused the outfielders to lose the ball against the dome. Sunglasses were used but were ineffective. Orange baseballs were proposed, but deemed unsuccessful. The solution for glare was to paint

the skylights so they became translucent more than transparent. Despite the attempt by Ralph Anderson and I.A. Namen and Texas A & M, growing grass in the Domed Stadium was never solved. Balancing the light and moisture requirements of the grass and the humidity and heat problems of the air conditioning system proved possible. But the sunlight glare issue kept the grass from growing. Plastics manufacturers proposed several artificial grass solutions until Chemstrand, a clothing company, developed a plastic carpet used for inner city playgrounds that couldn't grow grass.

The ground breaking for the stadium was conducted not with shovels, but with Colt 45's. The guns were fired into the ground as a symbol of the western heritage of Texas and as a nod to the name of the baseball team which changed its name to the Astros to mark the change of Houston's self-identity from a heritage centered frontier western town into a future focused space city that was building the control center for America's moon project.

There were two 'ground breakings'. One with the white power structure celebrating the beginning of construction with guns and a second, similar gun version of ground breaking with the black power structure of Houston. This 'separate but equal' attempt at integration was followed by the social innovation that the Domed Stadium was to be an integrated venue for sports fans. The Houston press did not report on the change in policy, and no attention was drawn to the fact that attendance at the stadium was open to all.

Another cultural / political issue lead to marketing the basement and sub-basement of the Stadium as a large scale fallout shelter in case of war. This rationale was used in the campaign to float the second bond required to fund the construction.

The 60,000 person Domed Stadium opened to great fanfare. The Score Board of controlled lights that were synchronized with sound was a hit with fans. The 1965 Scout Jamboree was held at the Domed Stadium. Fifteen thousand people had to be turned away. Tours of the Stadium as a tourist attraction at \$1.00 per person were instituted. In 1966 a boat show was held in the Stadium. The Stadium started a trend to interior sporting events in order to compete with television. The cycle for that is going in the direction of having more 'natural venues' with options to close in bad weather.