

construction, with a 1.2 meter wall. The hollow column is braced internally by webs and struts as needed. At upper levels loges and rooms are placed within the columns. At lower levels fire stairs are contained within the columns. At points where crucial force transitions occur, the columns are solid throughout their width. The main beams are 7 meters deep, and made of similar SRC hollow construction, but the web of each beam is pierced with weight reducing voids, shaped to form giant chrysanthemums. Each beam is made from seven square prefabricated sections, that are lifted and assembled in place. After weight reduction by chrysanthemums, each individual prefabricated beam-segment which has to be lifted into place will weigh approximately 70 tons.

The chrysanthemum design of the weight reducing hollow box design, is the most memorable feature of Hall A, and of the Tokyo international forum. It may be seen on the outside, from the JNR tracks, and will be etched in memory.

TECHNICAL NOTES: Although the clear span is quite large (58 meters center to center), the depth of the beam is such that shear is the main structural problem, not bending. The horizontal shear will be resolved through Vierendeel action of the concrete material between the chrysanthemums. Vertical shear between adjacent prefabricated panels will be resolved by dowel action of steel section. Approximate loads and sections are as follows: Maximum shear approximately 820,000 kg. Vertical shear required steel section approximately 840 cm^2 . Horizontal shear required cross section of concrete 26,000 cm^2 .

Airy White Structure Of The Lobby.

The lobby is 40 meters high, and is supported by a series of double arched double column steel bents, clad in fireproof concrete and plaster. Wind and earthquake forces in the longitudinal direction will govern this structure. These shear forces are taken out through three rows of X-bracing at three different levels: these X-braces, in harmony with the double arched double column bents, form a key element of the design. Galleries are hung on the inside of these massive double columns. The entire structure is glazed in safety glass.

TECHNICAL NOTES: Worst case vertical load is on the inner column of the structural bay and is expected to be about 140,000 kg (vertical + overturning from horizontal forces). Critical point is at floor #3, where arch of lower street occurs. Force is taken out through two diagonal struts contained within the arch section of the bay.