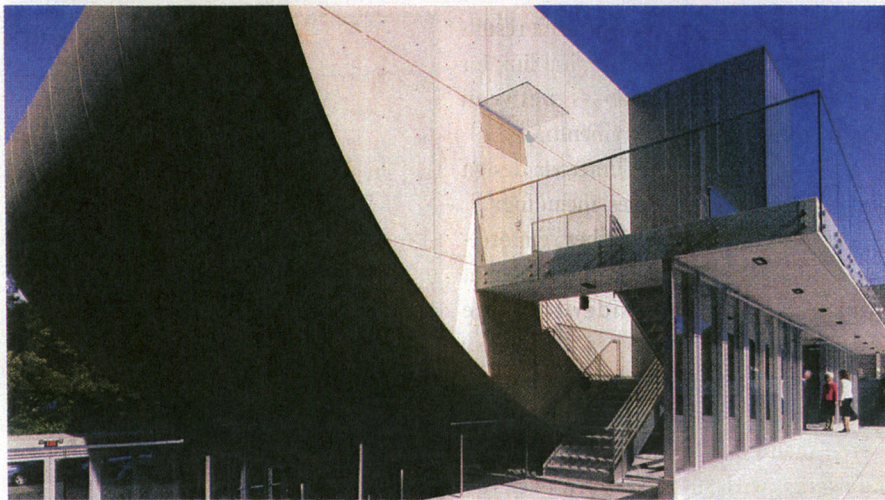


# Congregation Beth Sholom, San Francisco

Religious Facilities  
Winner



The Congregation Beth Sholom project consists of three seismically separated structures. The one-story plaza provides meeting and library space on the ground floor and space for public gatherings on the roof. It also provides a link between the social hall and the sanctuary, which are the other two main structures. The social hall is a two-story light-gage framed structure with long span roof trusses that is supported on a concrete podium.

The 704-seat sanctuary is the most dramatic element of the project. The inspiration for this structure derives from the traditional synagogue temples in Israel, with their bowl-shaped congregation areas. It is a large curved concrete shell structure that is supported on a narrow pedestal, giving it the appearance of almost defying gravity. The pedestal structure rests on a massive concrete mat foundation that provides seismic stability for the sanctuary. The roof is framed with structural steel and is separated from the sanctuary walls by a continuous perimeter skylight. The bowl and pedestal structures are architecturally

exposed, colored concrete.

To acoustically soften the hard interior surfaces, the inside face of the vertical walls are angled in a checkerboard fashion. Light-gage framing was used to frame the stadium-style seating inside. The bowl and its end walls are partially post-tensioned in

**Judge's Comment:**  
**"Beautiful, inside and out.  
Great attention to detail  
with the acoustics"**

two-directions to control deflections and cracking, and to provide the strength required to resist gravity and seismic forces. The variable radius of the bowl provided several analysis and detailing challenges not typical in residential or commercial post-tensioned concrete. Although not required by code, non-linear time history analyses were performed to verify the seismic performance and stability of the

## Project Team

**Owner:** Congregation Beth Sholom, San Francisco

**General Contractor:** C. Overaa & Co., Richmond

**Architect:** Stanley Saitowitz/Natoma Architects, San Francisco

**Structural Engineer:** Forell/Elsesser Engineers, Inc., San Francisco

**Acoustical Engineer:** Charles M. Salter Associates, Inc., San Francisco

**Mechanical Engineer:** Rumsey Engineers, Oakland

structure due to the unusual shape and elevated center of mass. The structural design was independently peer reviewed as a requirement by the city of San Francisco.

Project Manager Kevin Smith of general contractor C. Overaa & Co. states: "The cast-in-place concrete was very challenging. For instance, all poured-in-place walls have cast features, both inside and out, so doubling up the forms was very difficult. Formwork needed to be carefully engineered to maintain a crisp radius with clean chamfer-less corners. The use of post-tension cables enabled C. Overaa and the design team to build a structure, which has little or no visible cracking. Looking back, it was complicated, but our expert team was able to resolve these issues efficiently, resulting in a beautiful building, as pleasing to the eye as it is structurally sound." <<