

Chapter 7

Precedent studies



FUNCTIONAL PRECEDENTS

TGV station at Aix-en-Provence

Aix-en-Provence, France (2001)
Jean-Marie Duthilleul & Etienne Tricaud (AREP Architects)

Of the latest three TGV stations in France, the southernmost one is at Aix-en-Provence. It lies to the south-west of the town, halfway between Aix and Marseilles, and within easy reach of Marseilles airport.

The wave-shaped roof gradually rises from the railway tracks and concourse below, giving the impression that the station rises from its surrounding landscape. It is supported on a double row of timber columns that follow the wave-form. This gives the impression that the roof floats, as if separate, from the tracks and concourse below it, and creates an impression of it being light and spacious (Slessor 2003:50).

The station is entered from the western façade where the building bulges slightly as the glass wall curves outward. An external layer of timber louvers protects the glass, and helps to lessen any heat build-up and glare. It has the additional effect of giving the station a rustic feel. The eastern wall is clad in clear glass, which allows for views to Mont Sainte-Victoire in the distance. The station is surrounded by car parking that is connected by an oval ring-road that crosses the tracks to the north and south of the

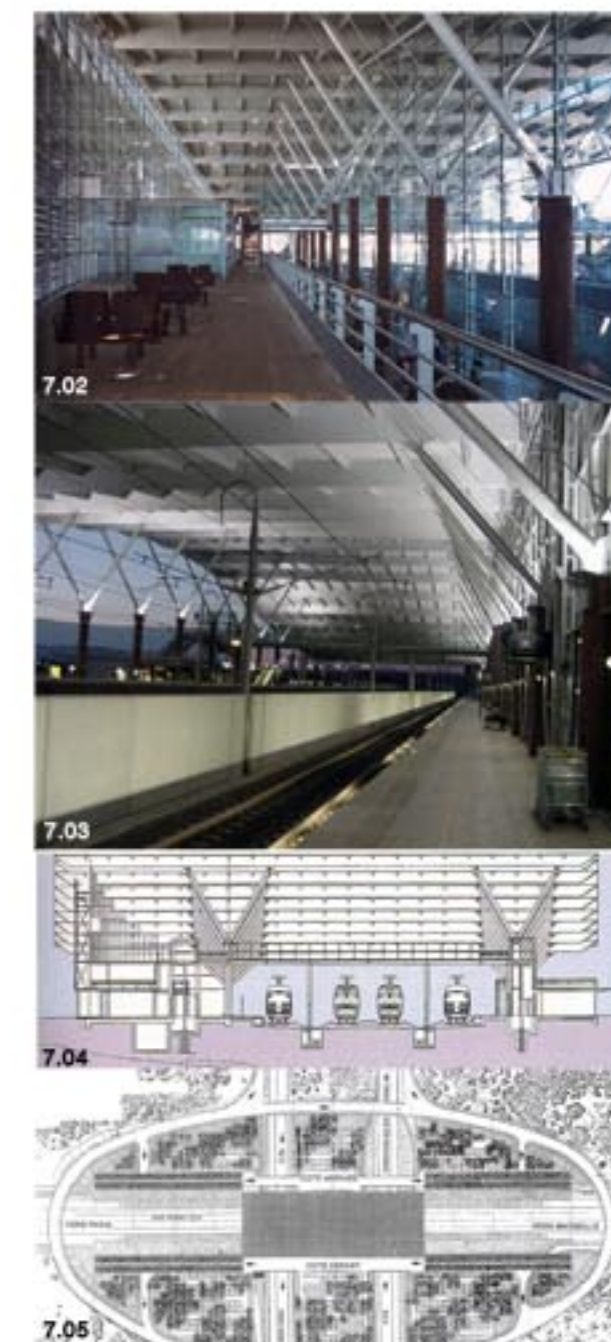
station. Busses and cars run in tunnels beneath the station building (Slessor 2003: 50).

The curved roof is clad in aluminium panels and supported on a series of v-shaped tubular steel members that tie up into metal plates on the top of the timber columns. There are small square roof lights on the surface of the roof which helps to illuminate the interior below. The underside of the roof is painted white. It can thus be said that Aix Station is responsive to its site, climate and programme (Slessor 2003:50).

Influence on design:

- Steel structure floating roof supported in a series of columns to cover the concourse;
- Use of glazing and the screening thereof.

- 7.01 Main approach to the station building (Botes 2004)
- 7.02 Interior view of building structure (Botes 2004)
- 7.03 View of the platforms (Botes 2004)
- 7.04 Section drawing (Slessor 2003:50)
- 7.05 Site plan (Slessor 2003:50)





TGV station at Valence

Valence, France (2001)
Jean-Marie Duthilleul & Etienne Tricaud (AREP Architects)

Gare de Valence TGV is located in eastern Valence, about ten kilometres from the town centre. The station opened its doors in 2001 and plays a key role in a regional road and rail transport hub. The regional TER rail line intersects with the station at its north end, while slip roads to the south connect it with a motorway link to Valence. Immediate surroundings to the station are split between agriculture and industry. It is anticipated that the improved transport link created by this station will help boost the local economy (Slessor 2003:46).

The station building design draws on traditional railway precedents of metal and glass train sheds. Conceptualised as a long glazed volume, the new structure seems to float above the tracks and platforms which are dug 7m below natural ground level. Station facilities such as a ticket office, information outlets, shops and services are housed on the upper level, while the lower level is dominated by the platforms (Slessor 2003:46). A tubular steel structure, resting on concrete walls at the platform level, supports the glass box design. The station facilities offer views out over the surrounding landscape to the hills at Vercours. As with the TGV at Aix-en-Provence, a major design concept for Valence TGV is the connection with the landscape. This helps ensure that the new station building conveys some sense of place, rather than being a closed cut-off domain (Slessor 2003:46).

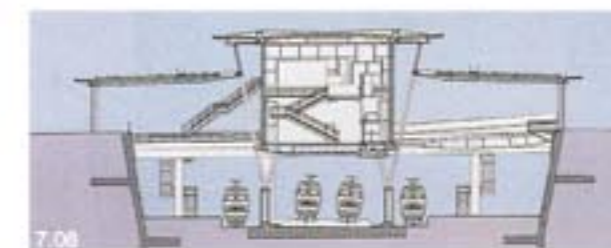
The platforms, dug 7m below natural ground level, required special attention to generate a sense of arrival and anticipation. A series of bridges link the station building with the car park that surrounds it. These bridges cut at various angles into the glass box of the building. On both sides, the bridges are protected by flat roofed canopies that extend the length of the station like side aisles. From the concourse, glass lifts and timber stairs wind down to the platform level. The

lightness and clarity of the glass concourse is in contrast with the atmosphere of massive concrete walls and the muscular rhythm of the steel structure at the platform level. Much of the station's appeal is based on watching and being watched as passengers flow through the spaces (Slessor 2003:46).

Influence on design:

- Steel structure floating roof supported in a series of columns to cover the station concourse;
- Contrast in elements between the lightness of a glass structure and platform level with its massive concrete structure; and
- Celebration of movement and "being social" through the act of watching and being watched.

- 7.06 View on platform level (http://en.wikipedia.org/wiki/Gare_de_Valence_TGV.html)
- 7.07 Interplay between solid and void (Architectural Record, 213(1274):46-47)
- 7.08 Cross section (Architectural Record, 213(1274):46-47)
- 7.09 Internal view with circulation (Architectural Record, 213(1274):46-47)
- 7.10 Long section (Architectural Record, 213(1274):46-47)



7.08



7.07



7.09



7.10

THEORETICAL PRECEDENTS

Ara Pacis Museum

Rome, Italy (2006)
Richard Meier & Partners Architects

The Ara Pacis Museum, designed by Richard Meier, is located next to the Piazza del Popolo in Rome, Italy. The Piazza del Popolo is a national heritage site in Italy. It houses some important historical Roman artefacts such as the tomb of Augustus Caesar (Roman Emperor at the time of Christ's birth) and the Altar of Peace built by Augustus Caesar between 13 and 9 BC to commemorate his military victories in Gaul (France) and Spain (Davey 2006:56). The altar stone on which sacrificial animals were slain is sheltered by a stone enclosure with two friezes decorating the exterior walls. Of the two friezes, the top one is perhaps most significant as it is a portrayal of Augustus, his family and aristocratic friends. Meier's design is the first major project to be undertaken inside the Aurelian walls for more than 60 years (Davey 2006:56).

Two controversial issues have been associated with the project. The first relates to its scale, and the second is concerned with the fact that the city major decided to make use of Meier rather than opening the scheme for a design competition. However controversial Meier's museum might be the fact remains that the site required immediate intervention as one of the best preserved site of Rome's imperial era (Davey 2006:56).

During the time of Mussolini (Italian Fascist leader at the time of the Second World War) in 1938, Vittorio Ballio Morpurgo was commissioned to build a structure aimed at keeping the elements away from the altar. By the 1980's Morpurgo's structure required serious maintenance, as the altar was increasingly exposed to the elements, pollution and vibrations caused by increasing vehicular traffic. A new shelter for the altar was thus needed (Davey 2006:56).

Meier's Ara Pacis Museum had to fit into a long thin site with the Tiber River to the one side and the Piazza Augusto Imperatore on the other. Adding to this the museum had to work around the altar which could not be moved, provide an appropriate setting for the altar, define the fourth side of the square, and expose the altar to external views (Davey 2006:58). The new museum is therefore designed to be transparent and permeable as is required by its context. In addition to the exhibition areas, there is a small auditorium, museum shop, offices and storage facilities (Richard Meier & Partners Architects 2008).

Influence on design:

- New structure envelopes the old structure;
- Use of a reinforced concrete structure;
- Use of glazed facades to allow for views into the interior;
- Employ the use of natural light; and
- Use of glass solar shading system

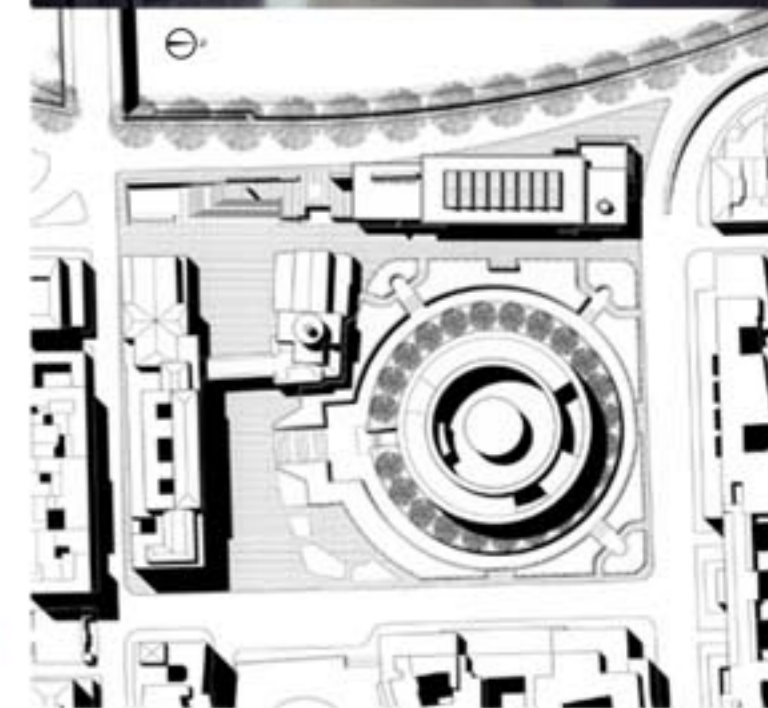
- 7.11 Interior view of the Ara Pacis Museum with the Altar of Peace by Augustus Caesar in the foreground (Architectural Review, 220(1316):56-61),
7.12 Main entrance (Architectural Review, 220(1316):58-61),
7.13 Entrance lobby (Architectural Review, 220(1316):56-61),
7.14 Site plan (Architectural Review, 220(1316):56-61).



7.12



7.13



7.14



Mill City Museum

Minneapolis, USA (2003)
Meyer, Scherer & Rockcastle Architects

The original Mill City structure was designed by an Austrian engineer named William de la Barre and constructed in 1878. At its time, it was the world's largest and most technologically advanced mill (Minnesota Historical Society 2005). At peak production, it ground enough flour for 12 million loaves of bread per day. In 1928 the Mill was rebuilt after an explosion devastated the facilities. Following the decline of the milling industry after World War I, the Mill finally closed in 1965 (LeFevre 2004:122). In 1971 the Mill was added to America's National Register of Historic Places. Twenty years later, in 1991, a fire destroyed the whole of its interior after it fell in disuse (Minnesota Historical Society 2005).

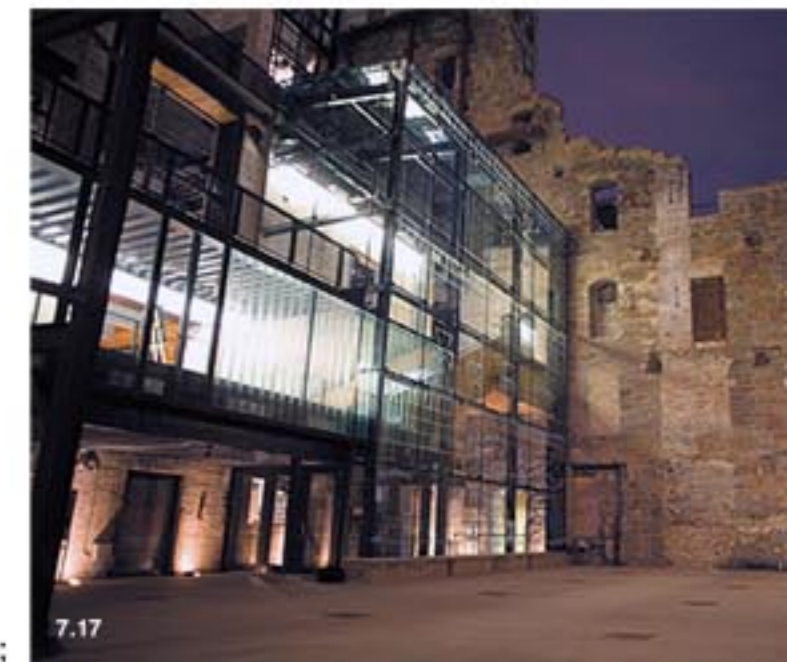
In 2003 the old mill was converted into a multipurpose building housing the Mill City Museum and office space (LeFevre 2004: 122). The museum, an independent space of glass and steel, was carefully integrated into the remains of the complex. According to the Minnesota Historical Society (2005) the project includes the conversion of the silos and the transformation of the factory's old offices into shops, small offices and lofts. Through their choice of building materials and by retaining most of the building's historic fabric, the architects were able to create a building that, in itself, acts as a multilayered exhibition about the city's history (LeFevre 2004:125). The challenge of the design was to "draw out the meaning and purpose of the building and orchestrate that, not create it". At some points, new elements were installed in positions where the original building elements once stood, so as to celebrate their historic memory.

The interior is designed to be a series of vignettes, and was derived from an initial survey of the abandoned building. Some historic building facilities changed in use, such as the old east engine room that once

housed boilers, now houses classrooms. The design philosophy is therefore "to do everything the way the millers did – work with simple material that is readily available..." (LeFevre 2004:125).

Influence on the design:

- The use of a glass and steel structure that is independent from the original structure of the existing building;
- The creation of a multi-functional building that responds to the context and its systems;
- The use of a glass and steel structure inserted between the old and the new building creates a new awareness of the old structure's historical value.



7.16 The ruin courtyard (LeFevre 2004:121)
7.17 Courtyard view (<http://www.millcitymuseum.org/html>)
7.18 Etched glass facades in the ruin courtyard (LeFevre 2004:125)



The Faculty of Law

University of Pretoria, Pretoria, South Africa (2005)
Kruger-Roos Architects

The Faculty of Law on the University of Pretoria's main campus was completed in 2005, and is the result of a design competition held in 2003. Facilities housed in the building complex include a library, offices and lecture rooms. The building has a strong north-south axis which forms the entrance to the facilities, while an east-west axis allows circulation inside the building. This axial organisation is a direct result from the building's contextual response (Le Roux & Botes 2005:37).

The building is orientated north with the main internal circulation running east-west. Moving along this circulation routes, the visitor passes by and through both enclosed areas and open courtyards. This seems to create interplay between inside and outside spaces, and appears to merge these. Vertical circulation is located along this circulation route.

According to Le Roux & Botes (2005:38) an architectural language of opposites seems to characterise the building: solid versus open; heavy versus light; protection versus freedom. The use of materials such as glass, steel and concrete convey an important part of this interplay.

Influence on design:

- Transparency and openness as design metaphors; and
- Material use of glass, steel and concrete.

7.19 Approach
7.20 Library interior
7.21 Circulation bridge
7.22 Internal courtyard





7.23

Constitutional Court

Johannesburg, South Africa (1998)
 OMM Design Workshop & Urban Solutions

The Constitutional Court is the result of an international design competition issued in July 1997. Architects Andrew Makin, Paul Wygers and Janina Masojada were the design team of this winning project (Darrol 2003:22). The site is located on the northern face of Braamfontein ridge in Johannesburg and covers an area of about 12.5ha (Peters 2004:2). Today the site is revered to as "The Fort" or "The Old Fort" and has a rich history dating back to the time of the ZAR and president Paul Kruger. It was built in 1892 and originally as a prison and police barracks. Shortly afterwards, it was remodelled as a fort with buttresses and battlement, and was finished just in time before the start of the Second Anglo-Boer War between 1899-1902 (Darrol 2003:19; Peters 2004:2). Following the British soldiers' capture of Johannesburg, "The Fort" was reverted to its prison function and remained like this for the next 80 years.

In its heydays under the apartheid government, the facilities housed not only criminals but also people who opposed the apartheid government. Some of the people who were once detained here include amongst others Robert Sobukwe, Albert Luthuli, Mahatma Gandhi and Nelson Mandela (Darrol 2003:19; Peters 2004:2). Finally, in 1983, the facilities ceased to operate as a prison.

The design of the Constitutional Court was careful not to imply any particular resolution for the building. One of the objectives was to establish connections with the immediate surroundings so that the site itself becomes a connector (Darrol 2003:20). This allows for an interconnected network of streets and squares that form open spaces and allow outdoor recreation. Within this design proposal the existing stair towers stand as beacons of light and liberty, and stand out as landmarks. In this way, the new Constitutional Court seeks to "transform this

negative history into a positive force; not to deny it but to assert that what sometimes seems hopeless is achievable" (Darrol 2003:26). In addition to the incorporation of former prison structures, the new Constitutional Court also retrieved and recycled materials such as bricks (Peters 2004:2).

This principle of reuse is consistent with the building's approach to energy conservation. Green architecture principles employed in the design range from taking advantage of the high diurnal range in Johannesburg to maintain interior comfort, to minimising the use of artificial amplification (Peters 2004:3).

Influence of design:

- The use of concrete as construction material;
 - Recycling of bricks and materials of the historic structure into the new structure;
 - Employing energy conservation principles; Many existing structures are demolished with only a few selective structures being retained; and
- A consideration of the broader urban context from which design inspiration and direction is drawn.

- 7.23 The new Constitutional Court building as viewed from the ramparts of the Old Fort (Buckland 2004)
- 7.24 Great African Steps (Buckland 2004)
- 7.25 The foyer with its slanting columns make reverence to being under a tree (Buckland 2004)
- 7.26 Court chamber (Buckland 2004)
- 7.27 Foyer with gallery to the left (Buckland 2004)

