

## The Das Nações Shopping Mall

The Das Nações Shopping Mall is to be used to house commercial areas, shops, eating areas, restaurants and a cinema. It is composed of three storeys, all above ground level and without basement levels.

The plan surface area is 151.0m x 54.5m set on an irregular geometric layout. There is a “break” in the central area of the building which divides it into two, clearly defined areas, in such a way that each is set at an angle of 45° to one another.

The scope of the works consists of a structural optimization of the prefabricated beams and the beam-column connections. In addition, a global analysis of the structure has been fulfilled so as to eliminate the expansion joint in the “break” between the two parts of the building.

As a result of the study of the beams, it has been suggested to change, from the initially foreseen

pre-stressed beams, to reinforced beams, maintaining, in general, the stipulated depth which shall offer ease and speed in both execution and execution phases.

All storeys are constructed employing hollow core slabs with an upper compression layer and have differing depths according to the loads in the considered area. The roof is also to be executed with a hollow core slab except in the area of the cinema, where a metal roof is to be employed.

The slabs are supported on reinforced prefabricated beams which, in turn rest on column corbels. The slabs have structural continuity through the columns employing splice connections and the beams through the columns using dowels which are thread through pre-drilled holes.

The prefabricated columns all have a rectangular cross-section.



### Brazil /2012 Project data

Structural type:  
Hollow core slabs and prefabricated  
concrete beams and columns.  
Location:  
COTIA - SP. BRAZIL  
Project date:  
April 2012.  
Owner:  
MSX INNOVA EMPREENDIMENTOS  
IMOBILIÁRIOS LTDA  
Architect:  
Érica Schiavinato  
Client:  
LEONARDI  
Scope:  
Structural Optimization of  
Construction Project