

## Pass a delicate and robust traffic line as pedestrian through a conflicting urban area

### Shinsuke SUEMATSU

M.Sc (Civil Engineering)  
Nippon Engineering  
Consultant co., Ltd.  
Saitama, Japan  
[suematsu\\_shinsuke@ne-  
con.co.jp](mailto:suematsu_shinsuke@ne-con.co.jp)

Structural Engineer, Architect



### Teppei MATSUI

M.Sc (Civil Engineering)  
Nippon Engineering  
Consultant co., Ltd.  
Saitama, Japan  
[matsui\\_teppei@ne-con.co.jp](mailto:matsui_teppei@ne-con.co.jp)

Structural Engineer



## 1 Abstract

The development of urban infrastructure, especially the pedestrian network in Tokyo is listed up as the most priority measure which they have in one of the urban redevelopment step-up projects in the nationally strategic economic zone, Takeshiba. This is reported about the detailed design for the pedestrian deck which makes a connection between the train terminal station and the ship terminal station.

We have to create not only a new pedestrian network through an existing elevated traffic network that spreads in multiple layers in the center of Tokyo (it is so that threads pass through the eye of a needle), but also pile foundation through underground buried objects.

It must be made sure that there is little impact on the green called old Kyu Shiba Rikyu Japanese Garden which is rare in the center of Tokyo and is next to this pedestrian deck surrounded by skyscrapers.

Therefore we consider many design factors of the pedestrian bridge, for example, landscape deliberation, construction method through intersecting road, maintainability concerning usability, cost calculation, and so on. There are various contexts in the surrounding environment of this special situation. As a result, we completed this pedestrian deck that had some unique detail designs.

Then we designed not only sophisticated simple and also a well-balanced form for accomplishing a harmony between high-rise buildings and the Japanese garden.

**Keywords:** pedestrian, footbridge, pc well, pentagonal steel box girder, hexagonal box pier, portal shelter

## 2 Introduction

The urban facilities in Tokyo are chaotic. Everywhere it is so crowded that nobody can be recognized quickly where he is. Now we introduce about Takeshiba area, one of the Urban Renewal Upgrade Projects at the center of Tokyo.

### Takeshiba Urban Renewal Upgrade Project

To hold the Tokyo Olympic in 2020, it is required that we have to strengthen the international competitiveness of the global city Tokyo. In Takeshiba district located at the gateway of Tokyo, the creation of an international business