



The new large space frame - TAMA-SUDARE

Tatsuya Yamada

Takenaka Corp. Osaka Head Office, Design Department.

Contact: yamada.tatsuya@takenaka.co.jp

Abstract

The frame that we propose consists only of thin bars (main members), tension rods and pin joints, just like the sticks, threads and knots of Tama-Sudare, a tool used for traditional Japanese performance. They complement one another and thus forms a huge space.

Flexible frames composed of small members vary subtly in shape and density according to the surrounding environment.

Moreover, single frames made of repetitions of several types of members facilitate construction and transportation.

The roof structure of this stadium is composed of what we call Tama-Sudare Frames.

A Tama-Sudare Frame is a system that can attain a flexible configuration by combining a flexural member (main member), a tension member (tension rod) and a pin joint connecting them.

Keywords:

TAMA-SUDARE ; Lightweight Structures ; Deployable and Retractable Structures ;
Temporary Structures ;



Figure 1. Exterior perspective(1)