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Cycle Tree®: Multi-Level Mechanical Bicycle Parking System†

1. Introduction

Illegally parked bicycles in areas around city train stations have become a social issue, as they make it difficult for pedestrians to walk safely and are also a cause of traffic congestion and other problems. As countermeasures, cities have constructed bicycle parking lots and remove illegally parked bicycles. However, this problem is becoming increasingly serious due to the lack of space for construction of bicycle parking lots near train stations.

The multi-level mechanical bicycle parking system "Cycle Tree" introduced in this paper achieves a high bicycle storage capacity due to its multi-level structure and offers outstanding safety and convenience not found in conventional bicycle parking. This revolutionary system solves the various problems described above by effectively utilizing the limited space around train stations.

2. Outline of Cycle Tree

Cycle Tree is an elevator-slide-type mechanical storage system which raises/lowers bicycles to their storage level and stores bicycles on storage racks in the storage facility. Bicycles which are to be parked are set in an unlocked condition, and the front wheel is grasped by the axle holder of the parking machine. Both aboveground and underground systems are available.

Photo 1 Above ground bicycle parking system

Photo 2 Under ground bicycle parking system

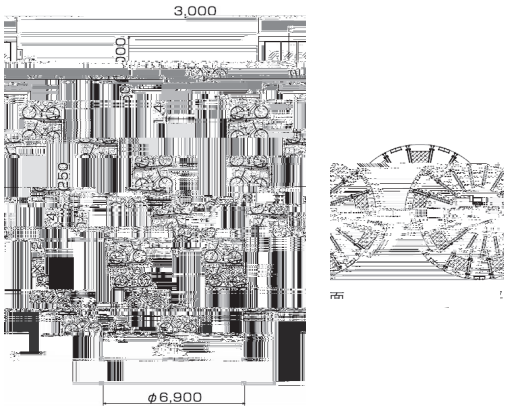

Fig. 1 Schematic view of under ground bicycle parking system

Recently-constructed Cycle Tree systems include the Noborito Station North Side Bicycle Parking Lot (**Photo 1**) in Kawasaki City as an example of an aboveground system and the Hirai Station South Bicycle Parking Lot in Edogawa City, Tokyo as an underground system (**Photo 2**). A schematic view of an underground bicycle parking system is shown in **Fig. 1**.

3. Features of Cycle Tree

The main features of Cycle Tree are as follows.

(1) Cycle Tree is scalable from its basic configuration with one block to multi-block systems.

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The combination and layout of the facilities can