Case I Ciputra World Surabaya, Indonesia

Distributed pumping system at Ciputra World Mall marks a shift in cooling system paradigm

Ciputra World Surabaya which was officially open on 22 July 2011 is located in the most prestigious superblock at the west gate of Surabaya, Indonesia. Built on an area of 9 hectares in the Central Business District (CBD), and developed by one of the property expert, Dr. HC. Ir. Ciputra.

Ciputra World Surabaya elevates Surabaya to become a more modern and international city, and is a lifestyle hub featuring international brands for the first time in Surabaya. presenting a supreme haven for high-class shopping, entertainment, dining and recreation.

The HVAC project is part of the third phase of Ciputra World Surabaya's development in the Mall expansion. This is a strategic collaboration between the Grundfos Indonesia Commercial Building Services (GTI CBS) Division and the authorized dealer for East Java province, Indonesia, "PT. Pafirma Mekadaya".

The situation

Based on the initial design, the conventional system will take 4 units of 90kW Chilled Water Pumps. The management of Ciputra World Surabaya would like to explore the possibility of reducing energy consumption using a modern and energy efficient chiller (State of the Art of Chiller Plants).

The solution

The GTI CBS team introduced Grundfos Distributed Pumping System to Ciputra World, where this concept is aligned with the building cooling needs and chiller energy savings targets, achieving energy savings of more than 50% for primary chilled water pumps (4 x 30 kW) from the previous consultant's design (4 x 90 kW).

Grundfos Distributed Pumping System consist a total of 51 pump units in Ciputra Mall. The units installed includes 4 units of primary pumps in chiller, 45 units of secondary pumps in AHU, and 2 units of secondary pumps in FCU. These secondary pumps installed consists of 24 units of MAGNA3 pumps and 23 units of TPE pumps (pictured below).

The outcome

Unlike the conventional systems, which would normally operate in the range of 0.02 - 0.025 kW/RT, Grundfos Distributed Pumping System operates between 0.015 - 0.018 kW/RT, indicating a high efficiency of the system.

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Possibility in every drop

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From left to right: MAGNA3 and TPE pumps in Chiller Plant room

Christian, Director of PT. Dynami Perkasa Indonesia as the main contractor said that "We are very pleased with the completion of the Ciputra World Surabaya project phase 3 which is supported by a professional team of Grundos both from the engineering and technical aspects in the field". In terms of products, we are already familiar with Grundfos, especially with the new concept of "**Distributed Pumping System**", which can be our reference in working on other projects in the future. MAGNA3 and TPE pumps are indeed very suitable for use in HVAC systems because they are easier to operate and **Save Energy.**

Irwan Suparman, President Director of PT. Parfima Mekadaya said, "The Ciputra World project phase 3 that we are working on, is the first mall project in Indonesia whose cooling system uses the Grundfos Distribution Pumping System. By using this system, we ensure that the temperature inside the building is relatively constant, and according to goverment regulations, and most importantly helps building owners to **Save Energy**".

The Extension Mall, which was officially opened on March 30, 2021, accommodates several new concept clothing-retail brand stores, restaurants and several new features such as Outdoor Park, Outdoor Car Parking, and Skylight Garden which are the focal point of the dining area on the 3rd floor, also a brand new thematic dining that presents alfresco seating areas. Grundfos Distributed Pumping marks a paradigm shift in cooling systems towards a new era of decentralized pumping. This new pumping principle is ready to meet the demands of increasing the comfort and efficiency of the building to a higher level as every visitor to Ciputra Mal has enjoyed.

Christian,
Director of PT. Dyna mi Perkasa Indonesia

Irwan Suparman,
President Director of PT. Parfima Mekadaya

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