



## FlowCon SM-Valves

FLOWCON SM VALVES USED IN SHOEMART MALL OF ASIA, PHILIPPINES

### Project name:

Mall of Asia. Location: Bay City, Pasay City, Metro Manila Philippines.

### Type of building:

Mall Mixed use with Shops, Restaurants, Theatre, Activity Center, Skating rink, Parking Buildings.

### Configuration of Building:

North Parking, South Parking, Main Building and Entertainment centre.

### Developer:

Shoemart.

### Date installed:

Between August to November 2005.

### Opened:

May 21, 2006.

### Designer & Contractor:

Camus Engineering.

Flowcon Valves: 170 pcs of FlowCon SM, EVS/ABV, ABM valves. Shoemart's Mall of Asia was a huge gamble for the family of Henry Sy Sr. Occupying a land area of around 20 hectares; they designed a colossal mall with an area of 387,000m<sup>2</sup>. It was a gamble for several reasons. Firstly, the land was away from regular public transportation. The Mall of Asia (MOA) was located by the Manila Bay in reclaimed land. The masses who do not own cars needed to take buses and jeeps to go to the malls. Secondly, the investment was huge. **How could they fill up 387,000m<sup>2</sup> of space with tenants in a short period of time?** Their previous mega project which was the Mega mall completed more than 15 years ago, took several years to get to 80% occupancy. The engineering group had to draw the crowd towards MOA with the main ingredients to a Philippine Mall's success: Cool

Comfortable Air-conditioning 363 days in a year, rain or shine (they are closed only during Good Friday, Christmas & New Years Day). Learning from their past experiences in Mall operations, staged project proved to be an engineering challenge, especially when faced with budget constraints. Shoemart tenants entered the mall not at once but in stages. Sometimes the tenants entered the mall maybe a year or two later. Many situations saw large areas for a large store converted to an art gallery area or a row of restaurants. So using manual balancing valves was ruled out of the question for the MOA project. The MOA project had another unique engineering challenge. It had two chiller plant rooms in opposite ends of the mall with their chilled water piping going towards the center of the mall. Sometimes, depending on the demand, the North Parking Chillers may have 2 chillers running and the South



Parking chillers have 3 chillers running. Or it would be the other way around. Or they would have the same number of chillers from the North and South running. In any case, the designer, Camus Engineering, did not have a way to calculate Delta P for each of the more than 170 pcs of Air Handling Units. The Delta P would vary a lot in different kinds of operating conditions with two different chiller plants at

opposite ends, operating different number of chillers each. **The solution and one of the only possible ways to design this project was to use Flowcon's Model SM** (No relation to Shoemart's nickname as locals fondly call Shoemart, SM too). Pressure Differential Independent Self Balancing Control Valves for all Air Handling Units. The wide Control Range that SM valves offer satisfied the wide Delta P operating range that each AHU would encounter. When the North and South Chillers run in different quantities, the Flowcon SM valves are able to maintain the design flow without any difficulty. Yek Yeu Merchandising, Inc, the distributor did not have to do much



work during the commissioning stage when different tenants started connecting and operating their AHU in different stages.

**Another advantage of using the Flowcon SM is the ease of resetting the flow rates.** There was an instance where the Skylight above the skating rink

was causing the ice to melt, due to the much higher than anticipated heat entering thru the skylight. The Designers from Camus Engineering sought our help. We were asked to increase the flow rates of various AHU at that skating rink area. Some were increased by 5%, some 10% some 15%. At the same time, we also lowered the flow rates of other areas in the mall that seemed to have less number of tenants and mall goers and therefore lesser load than expected. We accomplished this feat easily by just resetting the dip switch in the Flowcon valves actuator. Because of the fact that **the Flowcon SM valves are Pressure Differential independent**, the other Flowcon valves and AHU in the system were not affected by this change. We did not have to do anything in the other tenants' AHU. And they also did not complain because their Flowcon valves maintained the same design flow. In the previous older Shoemart Mall named Fairview, a change in their older manual balancing valves upset the Flow of the other existing tenants whose AHU were ok prior to this change. This proved that Dynamic valves are clearly the right choice for Mall projects.

It will be almost a year since MOA opened and so far all Flowcon SM Valves are working smoothly and we have not had any complaints so far. We don't expect to receive any complaints either. The only complaint I heard is that the Mall of Asia is so big, you will either get lost inside the mall, or you will forget where you parked your car and spend less time shopping and more time trying to locate your car in the parking lot.

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