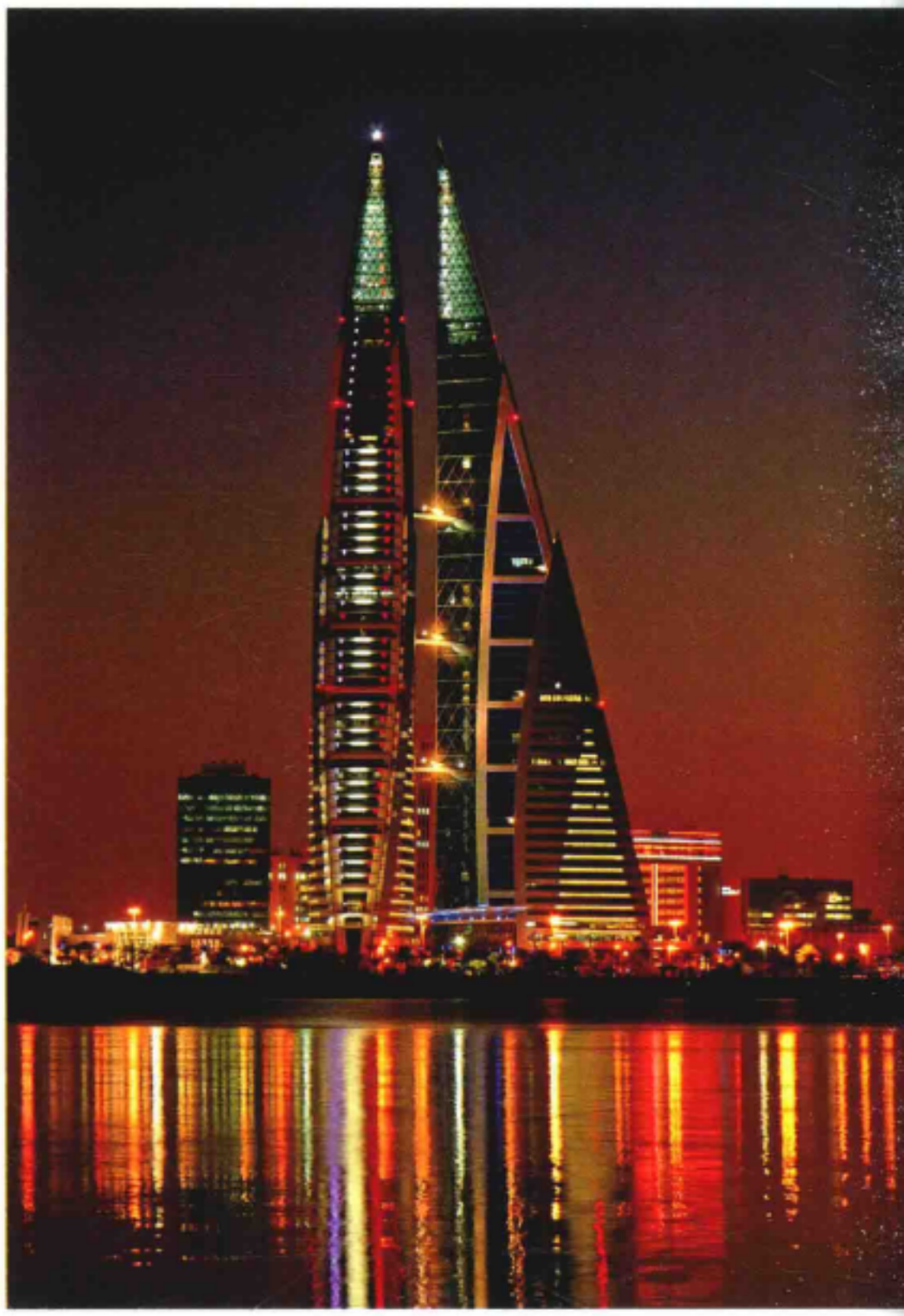
General view 全景图



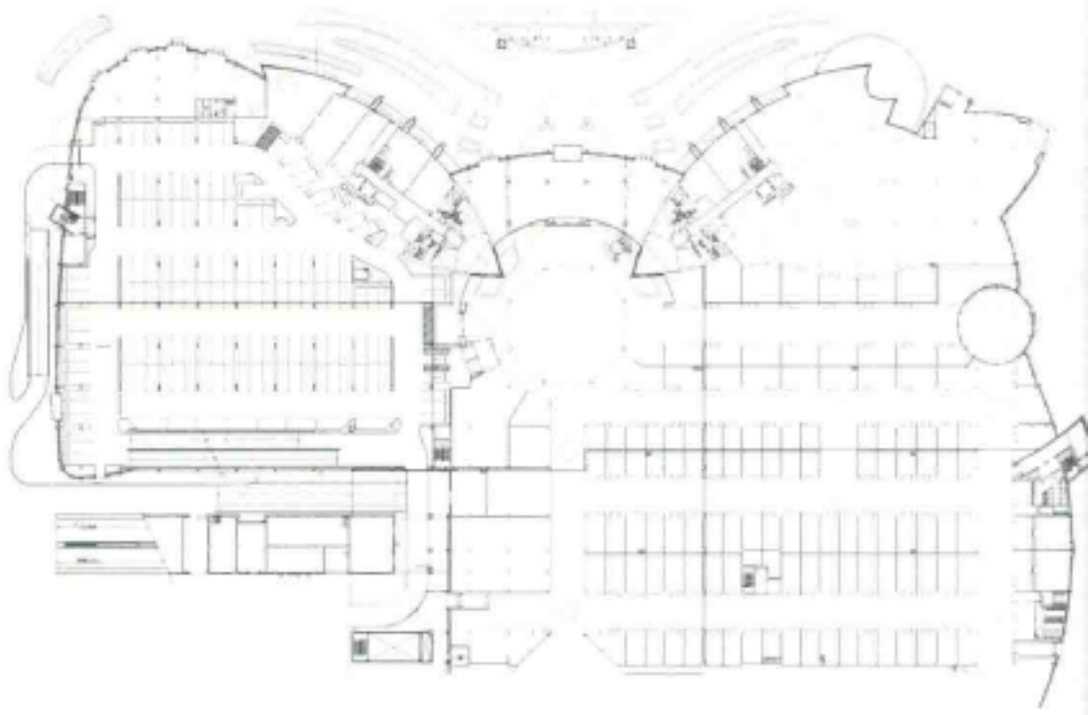
Night view 夜景

Bahrain World Trade Centre

The Bahrain World Trade Centre forms the focal point of a master plan to rejuvenate an existing hotel and shopping mall on a prestigious site overlooking the Arabian Gulf in the downtown central business district of Manama, Bahrain. The concept design of the Bahrain World Trade Centre towers was inspired by the traditional Arabian "Wind Towers" in that the very shape of the buildings harness the unobstructed prevailing onshore breeze from the Gulf, providing a renewable source of energy for the project.

The two fifty-storey sail-shaped office towers taper to a height of 240 metres and support three twenty-nine-metre diameter horizontal-axis wind turbines. The towers are harmoniously integrated on top of a three-storey sculpted podium and basement which accommodate a new shopping centre, restaurants, business centres and car parking.

The elliptical plan forms and sail-like profiles act as aerofoils, funnelling the onshore breeze between them as well as creating a negative pressure behind, thus accelerating the wind velocity between the two towers. Vertically, the sculpting of the towers is also a function of airflow dynamics. As they taper upwards, their aerofoil sections reduce. This effect, when combined with the increasing velocity of the onshore breeze at increasing heights, creates a near equal regime of wind velocity on each of the three turbines. Understanding and utilising this phenomenon has been one of the key factors that has allowed the practical integration of wind turbine generators in a commercial building design.

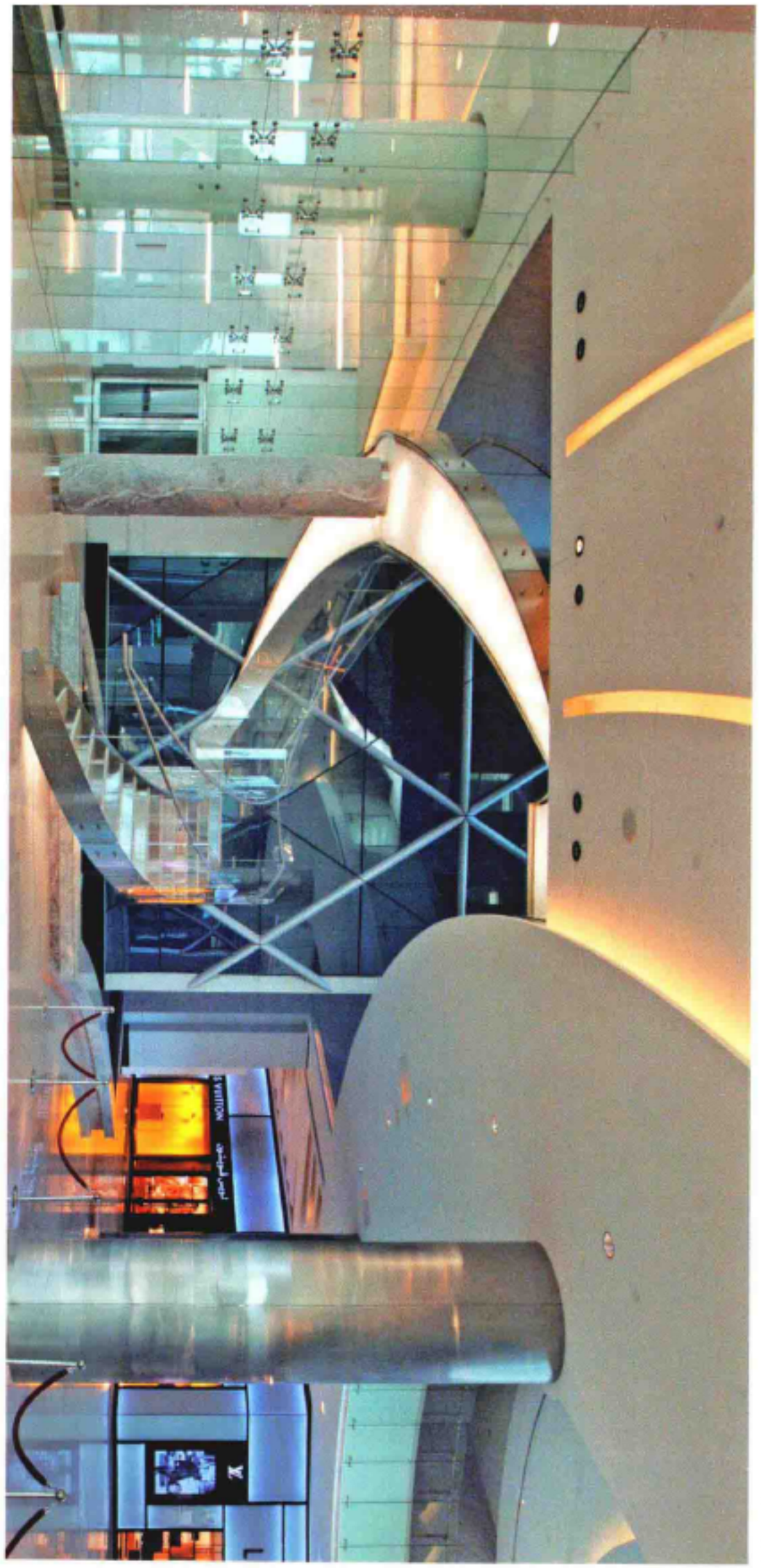


巴林世贸中心

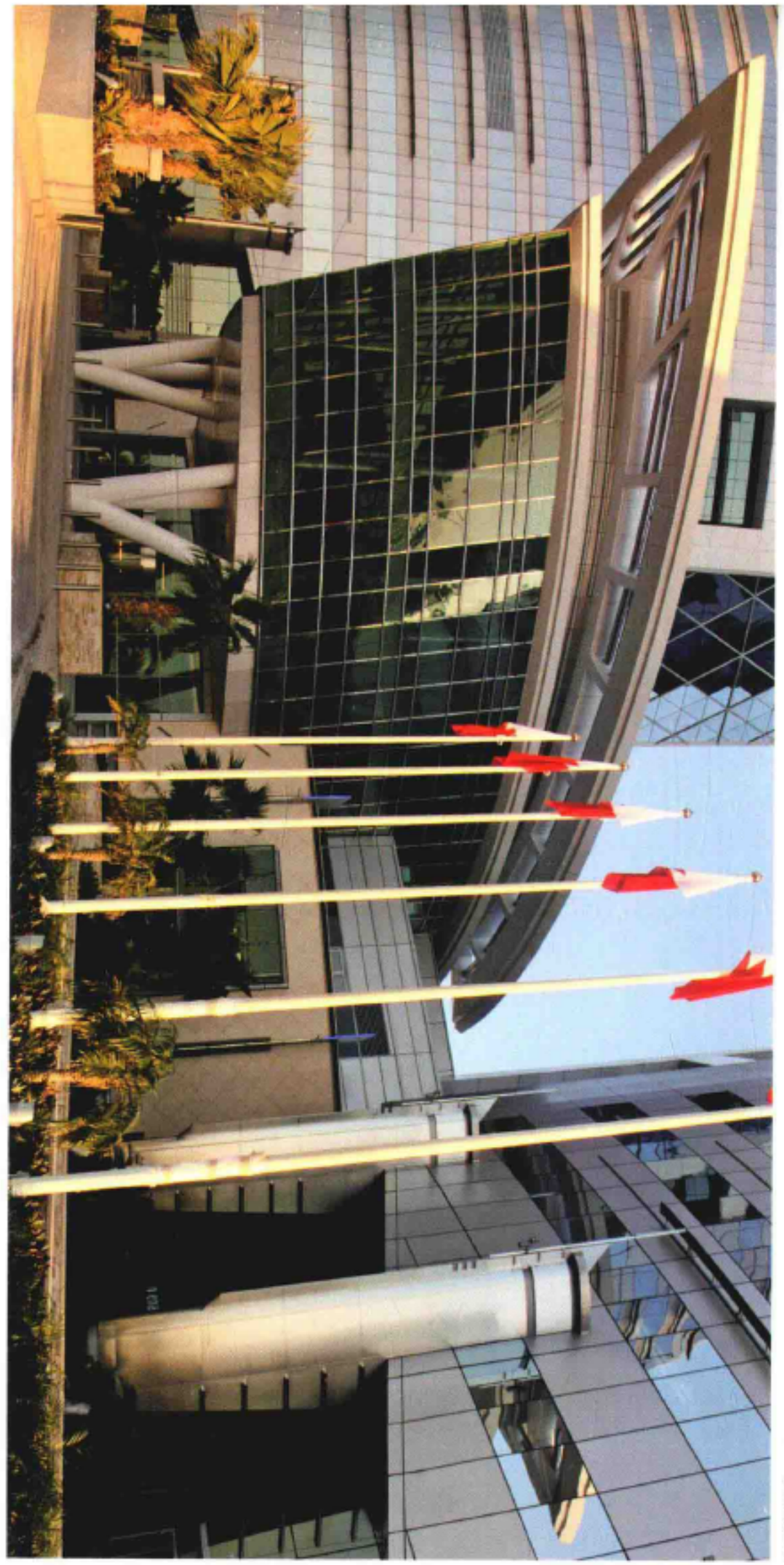
巴林世贸中心是巴林首都麦纳麦的一处市区商业中心重建工程的焦点，可以俯瞰阿拉伯湾的景色。世贸中心双子楼的设计灵感来自阿拉伯传统的“风塔”设计，建筑的造型利用海湾的海风为世贸中心提供了可再生能源。

这两座50层的船帆造型办公楼，高240米，底部装有直径29米的横轴风轮。两座双子楼共享下面的3层底座购物中心、餐厅、商业中心、停车场和地下室。

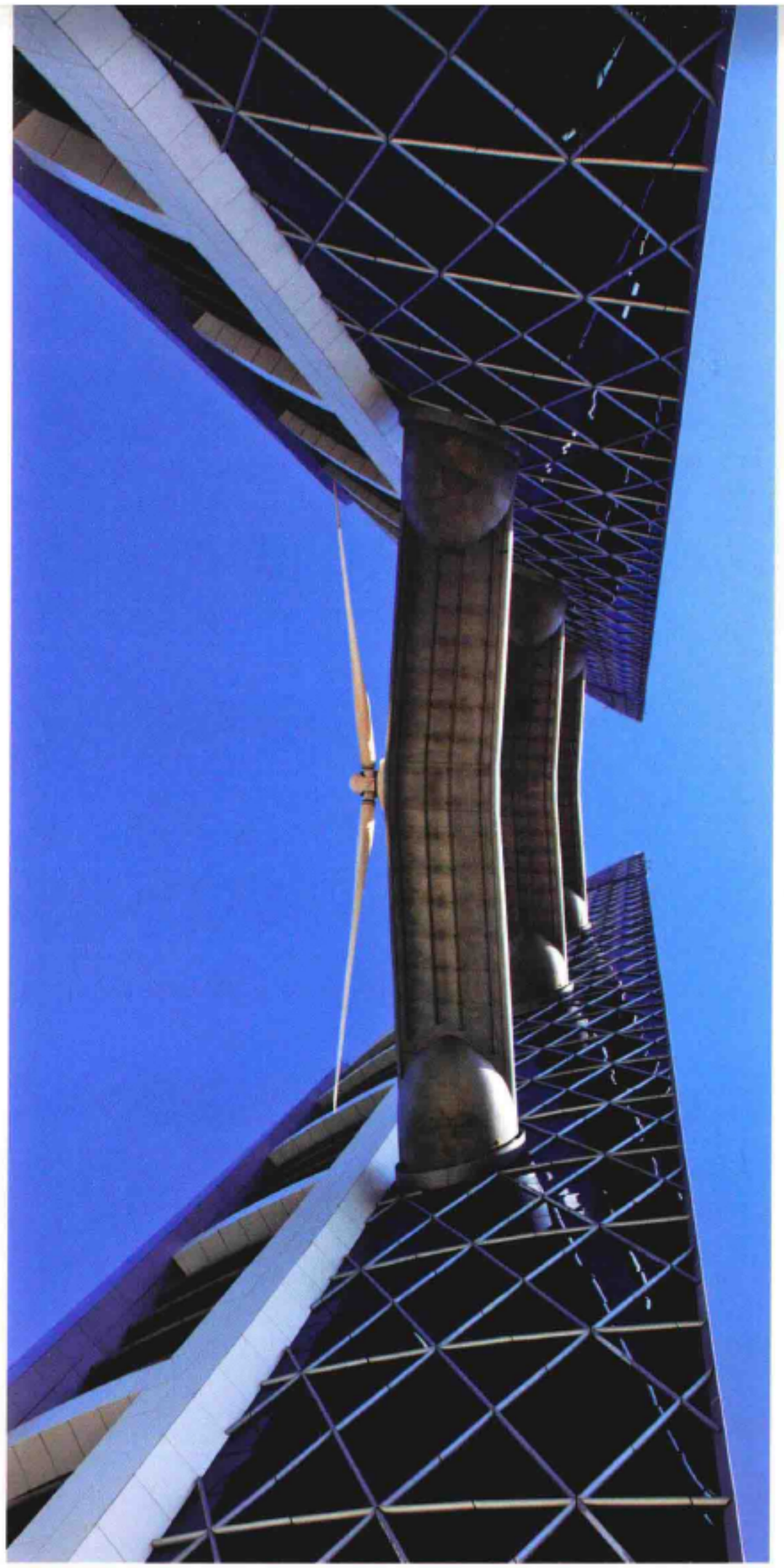
椭圆形造型和船帆式剖面形成了一个翼面，过滤了二者之间的海风，形成了一个向后的负压力，进而加快了两座楼之间的风速。在垂直方向，双子楼的造型同样形成了气流动力。随着向上逐渐变窄，它们的翼型截面也逐渐缩小。这一效果与随着高度而增加的风速为三个风轮提供了相等的风速。这一原理的理解与运用是在商业建筑设计上使用风力发电机的关键。



入厅 Hall



入口 Entrance



连接部 Connection

Architect: Atkins

Photo: Atkins

Completion Date: 2008

Commercial