

Hopkins Architects

霍普金斯建筑事务所

作为英国领先的建筑事务所，霍普金斯建筑事务所由迈克尔·霍普金斯于1976年在英国成立，并在迪拜和上海成立了分公司。事务所在城市总体规划、建筑设计尤其是可持续性建筑设计领域，已经取得卓越成就。

2012年伦敦奥运会室内赛车场 London 2012 Velodrome

建筑师：霍普金斯建筑事务所

总面积：21,700平方米

项目时间：2007年5月—2011年1月

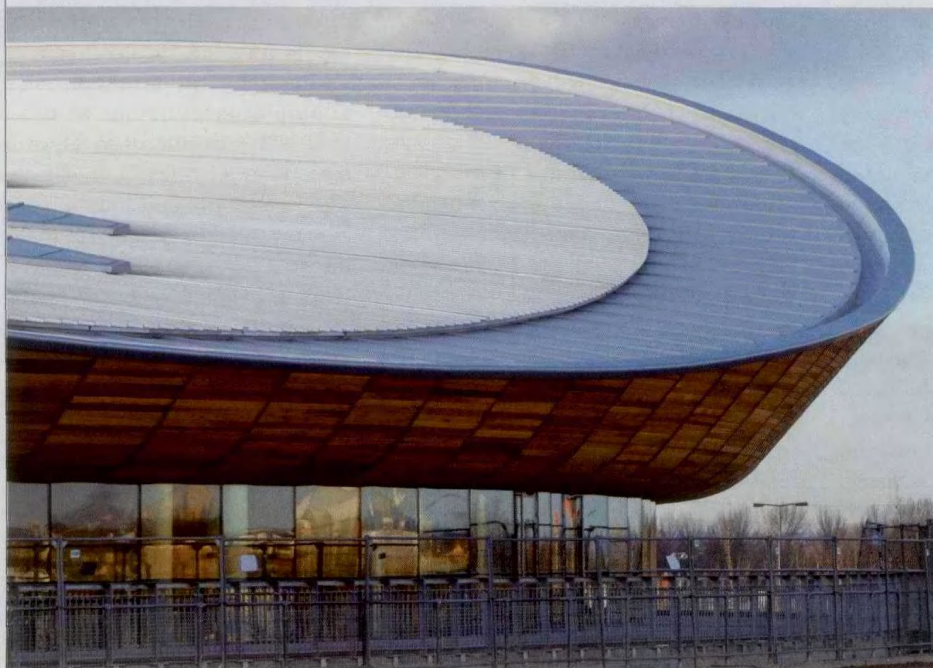
客户：伦敦奥运交付管理局

Architects: Hopkins Architects

Size: 21,700sq.m.

Project Date: May 2007-January 2011

Client: Olympic Delivery Authority



拥有 6,000 个座位的室内赛车场将举办 2012 年奥运会和残奥会的场地自行车赛事。奥运会结束后，赛车场将对职业运动员和当地的社区开放，内部还设有一个咖啡厅、提供赛车租赁和相应的配套设施服务的区域。

赛车场设计

独特的赛车场屋顶设计是对赛道形状的体现，采用了一个积极轻型的双弯曲线的网状结构。

观众区被主环形通道分成两大排，并通过如同丝带一样环绕赛场的地面到屋顶的全高窗户设计，实现了一个 360 度的主环形通道。玻璃围合的原 360 度的主环形通道，不仅为场馆内观众欣赏奥林匹克公园的其他部分和整个伦敦天际线提供了视点位置，同时让场馆外的观众欣赏场馆内部以及观看较低层的赛事成为可能。

赛道

赛车是一个经过精密处理后的精致的人体工程学实体，有其无法比拟的有效性；建筑师希望这种贯穿赛车设计和制造过

程中的设计创意和精密工艺能够在建筑中得以彰显。这不仅仅是对赛车的一种模仿，而且也是一种对场馆功能需求的一种立体化回应。通过场馆内环绕整个赛道的观众区，来实现赛事中最佳的观众氛围。著名的自行车赛道设计师罗恩·韦伯负责了 2012 年赛道的设计和和实施，他曾参与了悉尼和雅典奥运会赛道项目。整个赛道区采用了 56 千米的刨面木材覆盖，这是一种由可持续的西伯利亚松树加工后的材料。赛道使用了超过 35 万粒的钉子来固定。

可持续性元素

通过设计建筑达到了轻盈和高效的特点，这是对赛车有效设计的一种体现。策略性屋顶设计能让室内拥有充足的自然光线，减少了照明能耗；建筑外壁穿孔覆层让室内拥有良好的自然通风。

建筑的节水装置和雨水收集减少了水的使用量。简洁紧凑的设计最大限度地减少了主赛道的能耗，较之北京奥运会的赛车场屋顶每平方米 65 千克的承重，轻盈的网状屋顶结构每平方米承重只有 30 千克。

伦敦市市长鲍里斯·约翰逊说：“对于所有相关的设计和施工人员来说，这一宏伟的场馆是一次巨大的成功。其双曲线屋顶和如同丝带一样光滑动感的赛道，已然使它成为伦敦奥运会的一个标识。它以怡然的姿态欢迎世界顶级的赛车车队，在 2012 年夏季奥运会上向世界纪录冲刺；同时它也是对新一代赛车手的一种激励。毋庸置疑，奥运会之后，赛场也将成为社区和未来几年主要国际赛事的场地选择，从而推动伦敦成为世界赛车之都。”

霍普金斯建筑师事务所资深合伙人迈克·泰勒指出：“我们最初的规划是将建筑、工程学和赛车属性相结合，实现一个与 2012 伦敦奥运会相匹配的独特设计。值得庆幸的是，这种理念很明显已经付诸实践，竣工后的建筑，呈弧线形的室内木质赛道表达了一种动感，同时建筑在工程的各个方面的精密工艺可以与赛车自身的有效性相媲美。在 VeloPark 区全部完成后（赛后将增加公路赛车环形赛道和山路赛车赛道），从中间部分的主环形通道便可以观看到各种赛事。”



The 6,000 seat Velodrome will host the Olympic and Paralympic track cycling events in 2012. After the Games, the legacy Velodrome will be used by elite athletes and the local community and will include a café, bike hire and cycle workshop facilities.

Velodrome Design

Distinct Velodrome roof designed to reflect the geometry of the cycling track, using a very lightweight double curving cable net structure.

The 6,000 seats are split into a lower and upper tier, allowing a 360 degrees concourse level in between with a

continuous ribbon of full height windows. The 360 degree glazed concourse level in legacy will offer spectators inside the Velodrome views out onto the rest of the Olympic Park and across the London skyline, while allowing people outside of the Velodrome views into the venue and down onto the cycling track.

Velodrome Track

The bike is an ingenious ergonomic object, honed to unrivalled efficiency; we wanted the same application of design creativity and engineering rigor that goes into the design and manufacture of the bike to manifest itself in the

building. Not as a mimicry of the bicycle but as a three dimensional response to the functional requirements of the venue. The venue has also been being designed with seating all the way round the track to create the best possible crowd atmosphere during events.

Renowned Velodrome track designer Ron Webb oversaw the design and installation of the 2012 track having previously worked on the Sydney and Athens Velodromes. 56km of surface timber from a sustainably-sourced Siberian pine was laid to form the track surface, fixed into place with more than 350,000 nails.



Sustainability Elements

The building has been designed to be lightweight and efficient to reflect the efficient design of a bicycle. The use of abundant daylight reduces need for artificial lighting, and natural ventilation is achieved through openings in the external timber cladding of the venue.

Water saving fittings and collection of rainwater for reuse in building are built into design to help reduce water consumption. Compact design minimises energy consumed to heat the main arena. Lightweight cable-net roof structure weighs 30kg/sq.m. compared to 65kg/sq.m. for the Beijing Velodrome.

The Mayor of London Boris Johnson said: "This magnificent venue is a triumph for all those involved in its design and construction. Already an icon for the London Games, with its sweeping roof and sleek ribbon of track, the Velodrome is poised for our world-beating cycling team to smash records in the summer of 2012 and inspire a new generation of racers to take to the saddle. There is no doubt that the Velodrome will be the venue of choice after the Games, both by the community and for major international competitions for years to come, helping to make London the cycling capital of the world."

Mike Taylor, Senior Partner of Hopkins Architects: "We set out with the ambition to combine architecture, engineering and cycling to create a unique design worthy of London 2012. Hopefully this philosophy is now evident in the way the completed building expresses the dynamism of the internal timber track in its curved form and emulates the efficiency of the bicycle in all aspects of its engineering, and when the VeloPark is complete (after the Games, a road cycle circuit and mountain bike course will be added to the Velodrome), all forms of cycling will be visible from the concourse."

