



河南省科技馆新馆概览

HENAN SCIENCE AND TECHNOLOGY MUSEUM



科技磁场
文化映像

MAGNETIC FIELD OF SCIENCE TECHNOLOGY
IMAGE OF CULTURE

项目概况

Project Overview

河南省科技馆新馆是省委省政府高度重视的一项重大惠民工程，是传播科学技术、提升公民科学素质、拓展青少年科学教育实践的一项重大公益项目。项目选址位于郑州市郑东新区白沙园区象湖湖畔（郑开大道以北，锦绣路以东，贾鲁河西南角），距郑州市中心约20公里，距开封市中心约40公里。建设用地面积127.69亩，规划建设规模13.04万平方米左右，主体建筑建筑面积105098平方米，总高43.85米，地下一层、地上四层（局部夹层），总投资估算为20.37亿元。主体建筑东侧设计地下两层的独立停车场，在象湖旁设计一座100米高的圭表塔。

The new Science and Technology Museum of Henan Province is a major project of benefiting the people highly valued by the provincial Party committee and government. It is a major public welfare project to spread science and technology, improve the scientific quality of citizens and expand the practice of science education for teenagers.

The project site is located at Xianghu Lake (north of Zhengkai Avenue, east of Jinxiu Road, southwest corner of Jialu River) in Baisha Park, Zhengdong New District, Zhengzhou city. It is about 20km away from the downtown of Zhengzhou city and 40km away from the downtown of Kaifeng city.

The construction land area is 127.69 mu, the planned construction scale is about 130400 square meters, the main building area is 105098 square meters, the total height is 43.85 meters. There are one floor underground and four floors above ground partly inter layer). The total investment is estimated to be 2.037 billion yuan.

The east side of the main building is designed with two underground independent parking lots. A 100 meter high Chinese ancient tower called Guibiao is designed beside the Xiang lake.



建设目标 Construction goals

国际一流 国内领先

First-class in international Leading-role in China"



建设定位 Construction orientation.

具备国际视野 彰显中国气质

With a global perspective, highlighting Chinese temperament

富有河南特色 符合大众审美

Enriching Henan characteristics, and conforming to the aesthetics of general public

——满足公众多层次、多维度科普服务需要的复合型科技馆

A Composite science and technology museum that meets the scientific service needs of the public at multi-level and multi-dimension.

——中部地区重要的科学传播中心

An important center for scientific dissemination in the central region of China;

——提升公众科学素养的科普教育基地

improving public scientific literacy.

——激发青少年科学兴趣的创新实践基地

An Innovation and Practice base to inspire youngsters' scientific interest

——促进创新型河南建设的科技交流基地

A Scientific and technological exchange base to promote innovative construction for Henan

建设地点

郑州市郑东新区白沙组团锦绣路东侧、郑开大道北侧、贾鲁河西南侧。距郑州市中心约20公里，距开封市中心约40公里。

Construction site

At the east side of Jinxiu Road of Baisha Formation, the north side of Zhengkai Avenue, and the southwest side of Jialu River in Zhengdong New District of Zhengzhou City. It is about 20 kilometers from the city center of Zhengzhou and about 40 kilometers from the city center of Kaifeng.



建筑工程设计 >>>

Architecture Design

建筑设计单位：同济大学建筑设计研究院（集团）有限公司

Architecture Design unit: Tongji University architectural design and Research Institute (Group) Co., Ltd.

河南省科技馆新馆主体建筑建筑面积105098平方米，总高43.85米，地下一层、地上四层（局部夹层）。主体建筑东侧设计地下两层的独立停车场，在象湖旁设计一座100米高的圭表塔。

The main building of the new museum has a building area of 105,098 square meters, a total height of 43.85 meters, a basement floor and four floors above the ground (with partial mezzanines). On the east side of the main building, there is an independent two-storey underground parking lot. A 100-meter-tall sightseeing tower, the Guibiao Tower, is designed next to the Xianghu river.



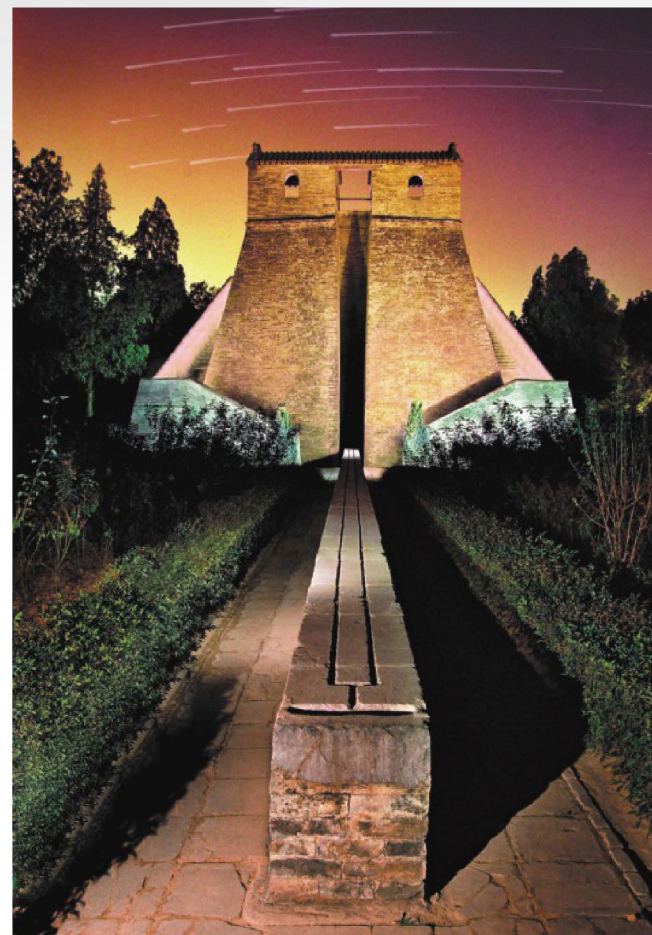
设计灵感 >>> Architecture Design Inspiration

科技磁场·文化映像

A magnetic Field of Science and Technology, A cultural Image of the Central Plains"

“科技磁场”——设计灵感来源于河洛文化意向，建筑形态宛如黄河与洛河自然交汇形成的天然造型，又如飞鸟展翼，寓意河南腾飞、中原崛起。

A magnetic Field of Science and Technology: ——The architectural design was inspired by the image of “Heluo Culture”. The architectural form is like the natural shape formed by the convergence of the Yellow River and the Luohe River, It is also Like the wings of a flying bird. It implies "the rise of Zhengzhou and the rise of Henan."



“文化映像”——将天文学杰作登封圭表、农耕24节气、古老的铸造技术等中原文化和古代科技融入到建筑设计之中，给观众以强烈的文化冲击。

A cultural Image of the Central Plains"—— Central Plains culture and ancient science and technology such as astronomical masterpiece Dengfeng Guizi, 24 Farming Solar Terms and ancient casting techniques, etc., were integrated into the architectural design to give the audience a strong cultural impact.



主入口（西侧）鸟瞰图
Aerial View of Main Entrance (West Side)



沿郑开大道（东南侧）鸟瞰图
Aerial view of Zhengkai Road (southeast side)



沿郑开大道（西南侧）鸟瞰图
Aerial view of Zhengkai Road (Northeast side)



室外科学广场（东北侧）鸟瞰图
Aerial view of outdoor Science Plaza (northeastern)

入口大厅透视图

perspective view of the entrance hall



通高42米的建筑中庭高效组织各功能区，构成中心聚焦、内外互动、大气通用、气韵连贯的室内设计。

The 42-meter-high building atrium efficiently organizes various functional areas to form an interior design with focus, internal and external interactions, universal atmosphere and coherent rhyme.

30米直径的球体建筑形成视觉焦点，展现震撼的空间气氛，彰显球形结构的几何魅力。

The 30-meter diameter spherical building forms a visual focus, showing the striking spatial atmosphere and highlighting the geometric charm of the spherical structure.

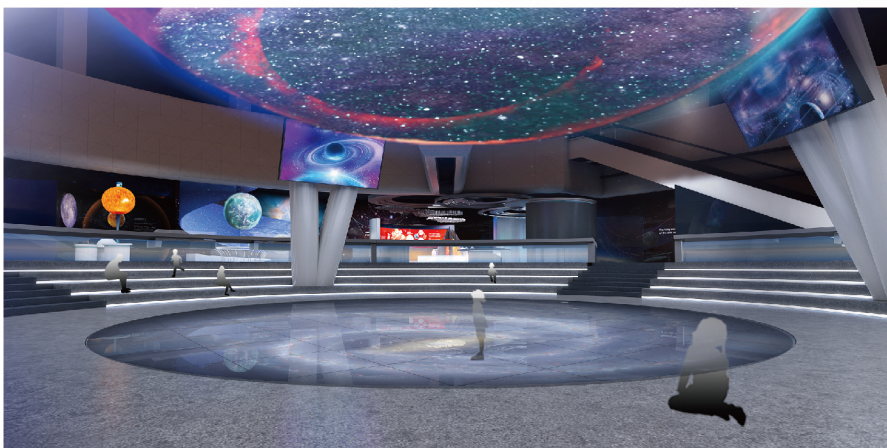


阶梯环形剧场

The ladder ring theatre

球体建筑下方设置开放式展教区，展教空间采用阶梯环形剧场形式，中间设置演讲表演区，周围设置玻璃护栏，护栏通过时间线为轴，对比展示世界和中国探索宇宙的人和事件，将观众带入神奇的科技世界。

An open exhibition area is set under the sphere building. The exhibition and teaching space is in the form of a ladder ring theatre. A speech performance area is set in the middle, and glass fence is set around it. Through the time line as the axis, this compares and displays the people and events of the world and China in exploring the universe, and can bring the audience into the magical world of science and technology.



三层中庭透视图

Three-story atrium perspective view

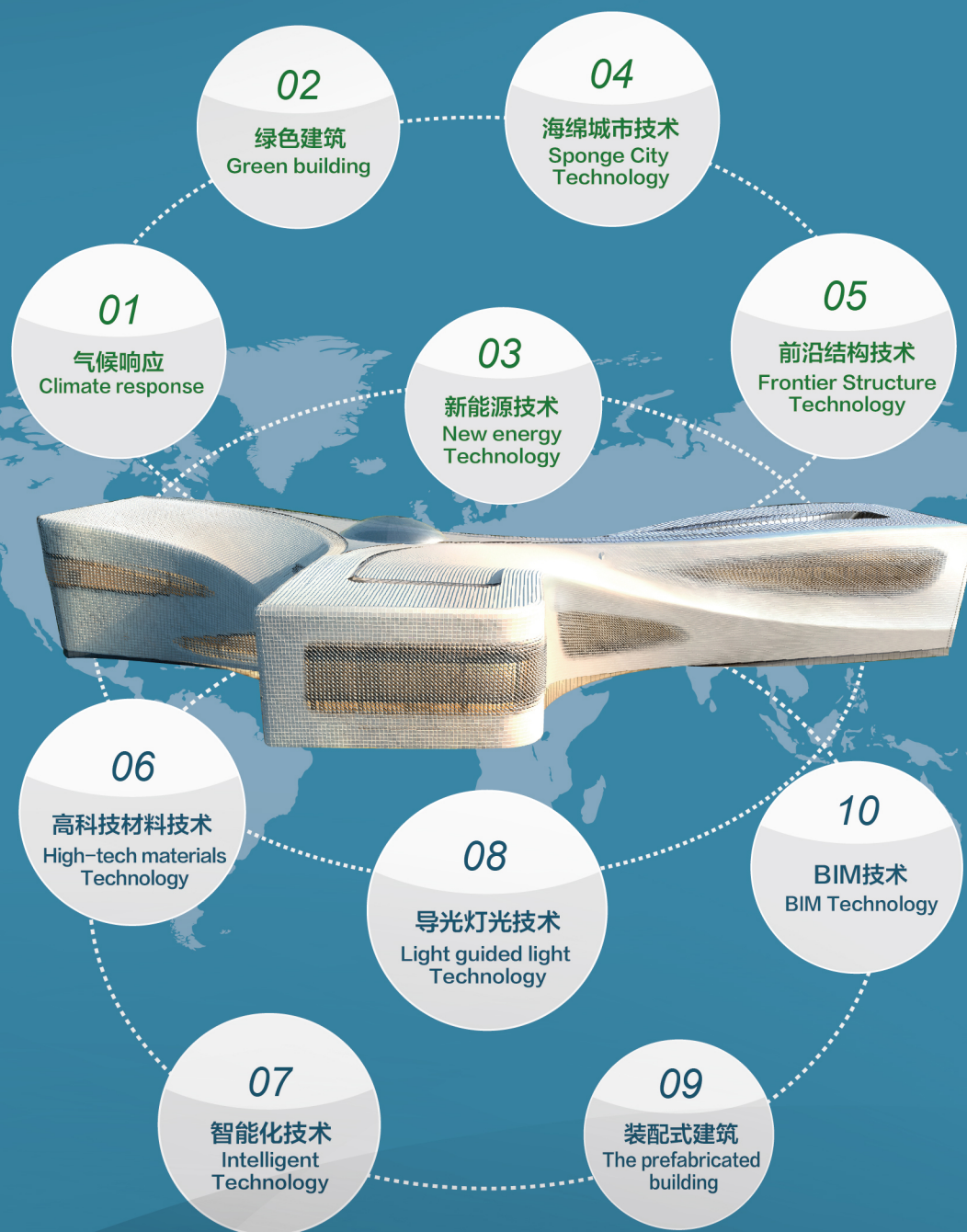
精确均衡的几何图案，丰富的自然采光与光影变化，配以数字化全穹顶空间展示，使恢弘瑰丽的穹顶空间透出强烈的震撼力。

Precise and balanced geometric patterns, rich natural lighting and shadow changes, together with digital full dome space display, make the magnificent dome space show a strong deterrent effect.



建筑技术的先进性

the advanced architectural technology



新馆主要功能

Main function of the new building

河南省科技馆新馆的主要功能包括：展示教育功能、研究功能和服务功能。功能性用房主要由展览教育用房、公众服务用房、业务研究用房、管理保障用房等组成。

The main functions of Henan Science and technology Museum include: demonstrating the educational functions、research functions and service functions. The functional housing is mainly composed of exhibition education rooms、public service rooms、business research rooms and management supporting rooms.

展览教育用房
Exhibition education houses

包括常设展厅、短期展厅、特效影院区、学术交流区、创新教育区等。
The Exhibition education houses mainly include permanent exhibition halls、short-term exhibition halls、special effects theater areas、academic exchange areas and the innovative education areas

业务研究用房
Business research houses

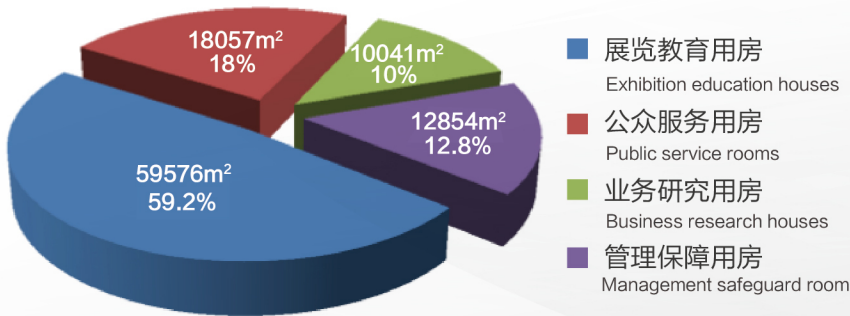
包括设计研究办公室、展（藏）品和材料库、展品制作维修车间、图书资料室、技术档案室、信息化工作室等。
Business research houses include: design research offices、exhibition products and material library、exhibits production and repair workshop、book reference rooms、technical archives and informatization studios.

公众服务用房
Public service rooms

包括门厅/大厅、休息厅、售票处、商品部、餐饮部、医务室等。
The Public service rooms include: foyer/hall、lounge、ticket office、merchandise department、catering department、medical office, etc.

管理保障用房
Management safeguard room

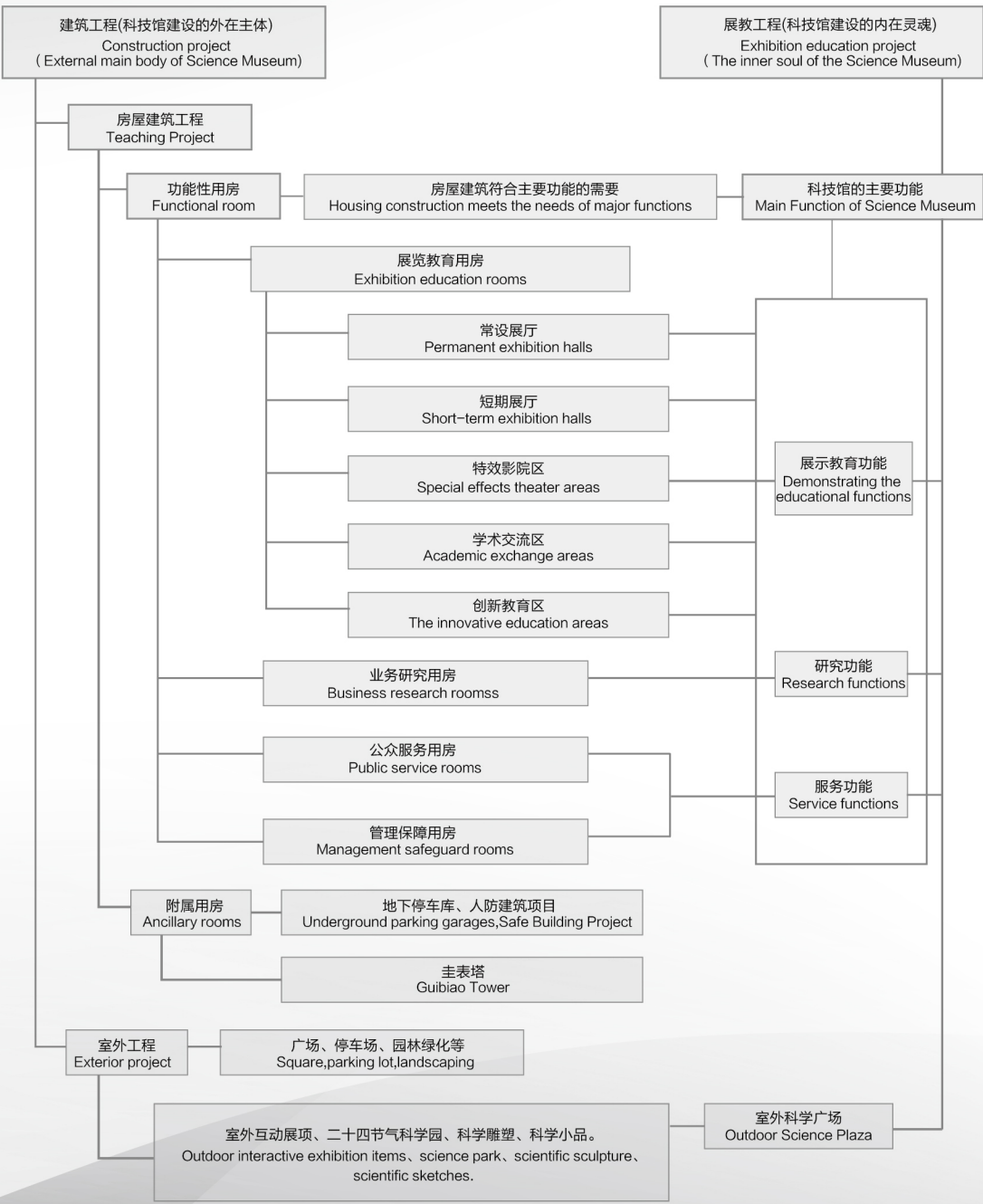
包括行政办公室、会议室、员工食堂及水、电、暖、空调、通讯设备用房等。
Business research houses include: design research offices、exhibition products and material library、exhibits production and repair workshop、book reference rooms、technical archives and informatization studios.



河南省科技馆新馆功能性用房建筑面积及所占比例
Henan science and technology museum functional housing construction area and proportion

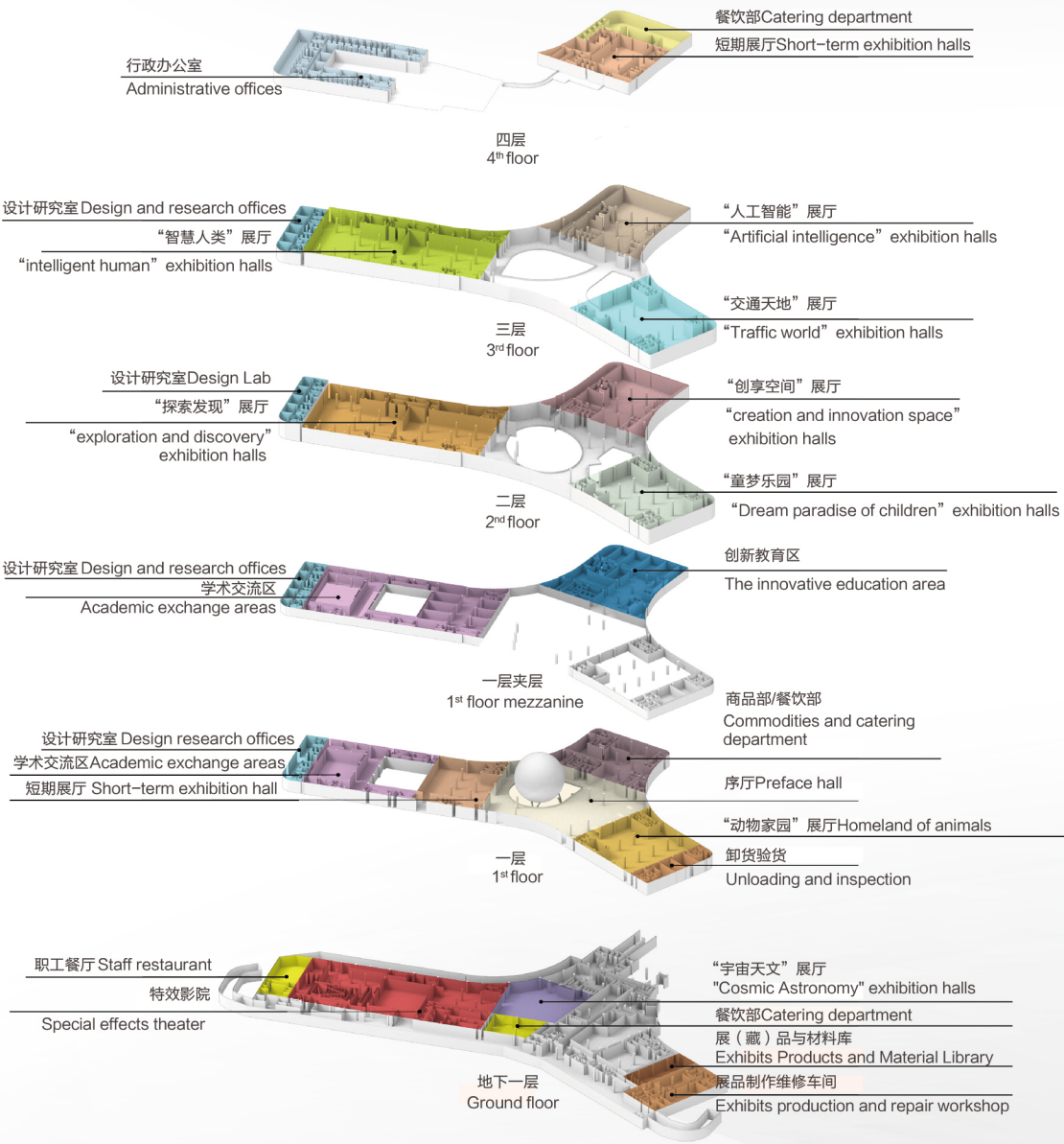
主要功能与功能性用房关系图

Relationship diagram for main function and functional housing



功能性用房分布图

Distribution Map of Functional Housing



常设展厅设置

Permanent Exhibition Halls

拟设8个常设展厅：“宇宙天文”、“动物家园”、“童梦乐园”、“创享空间”、“探索发现”、“智慧人类”、“交通天地”、“人工智能”。

It is planned to set up eight permanent exhibition halls: “cosmic astronomy”, “homeland of animals”, “dream paradise of children”, “creation and innovation space”, “exploration and discovery”, “intelligent human”, “traffic world” and “artificial intelligence”.



展教主题 Exhibition themes

智慧·创新·梦想

Wisdom Innovation Dreams

展教原则 Exhibition teaching principles

需求导向 | 主题展开 | 展教同步 | 互动体验

Demand orientation

Theme development

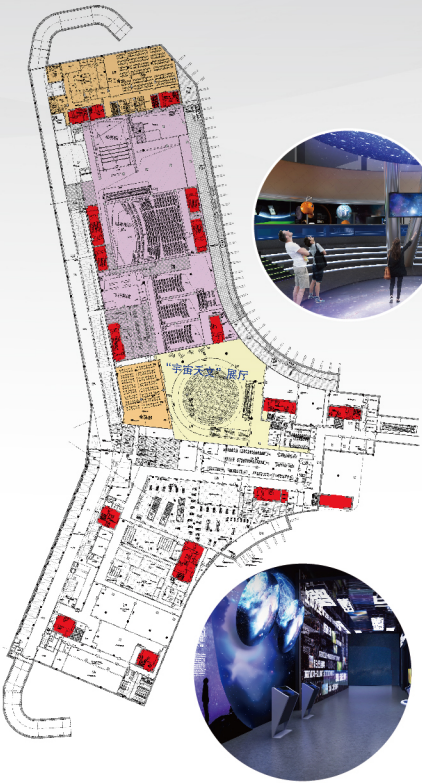
Synchronization of teaching and showing

Interactive experience



“宇宙天文”展厅 "Cosmic Astronomy" exhibition hall

位于建筑地下一层中庭，布展面积2028 m²。
It is located in the middle room of B1 floor of the building and has the exhibition area of 2028 m².

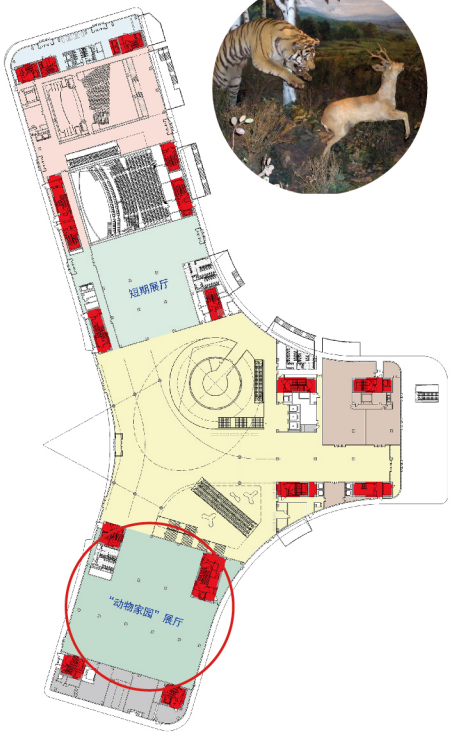


该展厅利用球体建筑内外空间，展现空间、时间、物质和能量构成的宇宙统一体，展示宇宙天体的运行规律和人类探索宇宙的天文成就，使公众直观地感受宇宙的浩瀚无垠，体验太空的精彩神秘，引领公众树立科学的宇宙观。

The exhibition hall uses the inside and outside space of the sphere building, which not only shows the universe unity composed of space, time, material and energy, but also shows the operation law of the universe planets and the astronomical achievements of human beings in exploring the universe. This allows the public to clearly feel the vastness of the universe, experience the wonderful mystery of space, and lead the public to establish a scientific impression of the universe.

“动物家园”展厅 "Homeland of Animals" exhibition hall

位于建筑一层南翼，布展面积2455 m²。
It is located in the south wing of F1 of the building and has the exhibition area of 2455 m².



该展厅以美国环球健康与教育基金会主席贝林先生捐赠的300多件珍稀野生动物标本为主，采用沉浸式、立体化设计，展示来自世界各地的野生动物，引发人们关注神奇的自然世界。

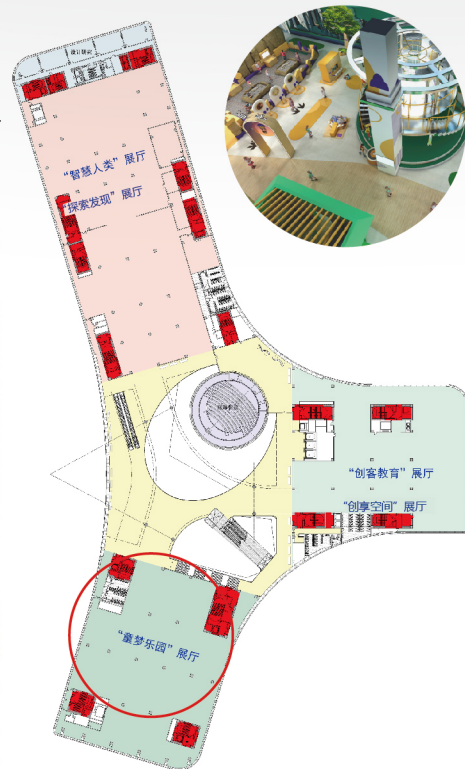
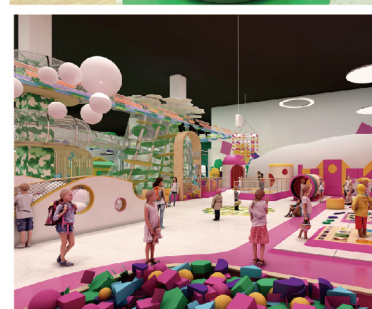
The exhibition hall is aimed at children aged 1-7 years old. According to their physical and mental characteristics and cognitive abilities, it follows the educational philosophy of doing and playing middle school. It encourages children to participate actively, choose freely, use their hands and minds, stimulate their creativity, curiosity and interest in learning, and get scientific enlightenment in the atmosphere of perception and play.

“童梦乐园”展厅

"Dream Paradise of Children" exhibition hall

位于建筑二层南翼，布展面积3308 m²。

It is located in the south wing of F2 of the building and has the exhibition area of 3308 m².



该展厅面向1-7岁儿童，根据其身心特点和认知能力，遵循动手做、玩中学的教育理念，鼓励孩子们主动参与、自由选择、动手动脑，激发其创造力、好奇心和学习的兴趣，在感知和游戏的氛围中得到科学的启蒙。

The exhibition hall is aimed at children aged 1-7 years. According to their physical and mental characteristics and cognitive ability, the exhibition hall follows the educational concept of learning through doing and playing.

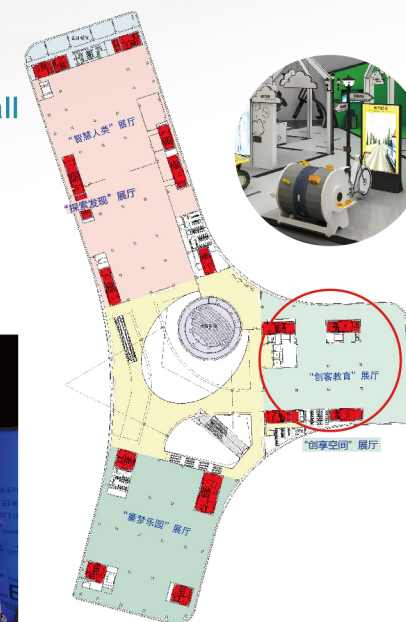
Encourage children to participate actively, choose freely, use their hands and brains, stimulate their creativity, curiosity and interest in learning, and get scientific enlightenment in the atmosphere of perception and play.

“创享空间”展厅

"Creation and Innovation Space" exhibition hall

位于建筑二层东翼，布展面积2918 m²。

It is located in the east wing of F2 of the building and has the exhibition area of 2918 m².



该展厅面向7-18岁的青少年，按照互动体验、展教结合、动手实践、共享表演、科学评价、循环改进的创客教育理念，将创客教育与学校教育相结合，为青少年提供创新创造、共享科学、快乐成长的课外活动空间。

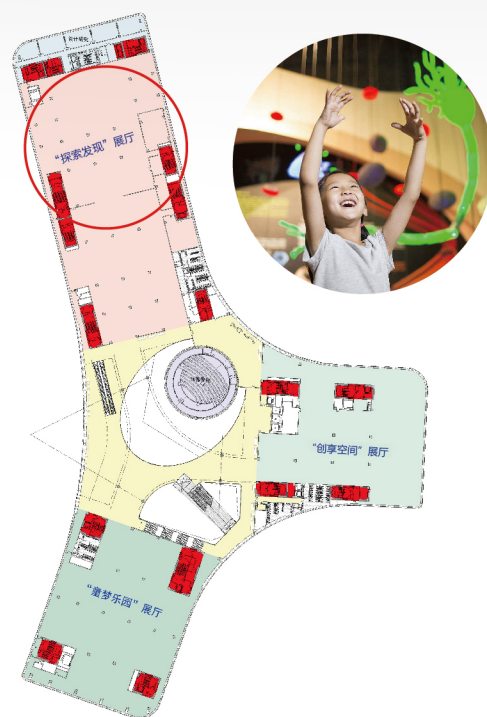
The exhibition hall is aimed at teenagers aged 7-18-years old. In accordance with the Tinkering education concept of interactive experience, combination of exhibition and teaching, hands-on practice, shared performance, scientific evaluation, and circular improvement, the exhibition hall combines Tinkering education with school education, providing teenagers with extracurricular activity space of innovation, sharing science and happy growth.

“探索发现”展厅

The "Exploration and Discovery" exhibition hall

位于建筑二层北翼，布展面积4691 m²。

It is located in the north wing of F2 of the building and has the exhibition area of 4691 m².



该展厅围绕人类发展历程中具有里程碑意义的科学成就，展示科学世界的美妙与神奇，展现科学家的探索精神，讲好科学家故事，并以此创新设计一系列参与互动的展品展项，使其与教育活动更有效的融合，形成精彩纷呈的多学科展区，让公众在探究科学中感悟求真求实、创新奉献的探索精神。

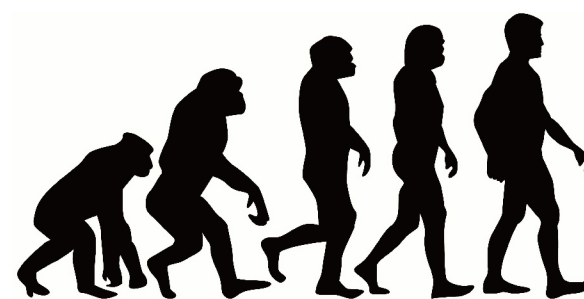
Focusing on the landmark scientific achievements in the course of human development, the exhibition hall displays the beauty and magic of the scientific world and the exploration spirit of scientists, Tell the story of scientists, and design a series of interactive exhibits based on this, so as to integrate them with educational activities more effectively, form a colorful multiple subjects exhibition area, and let the public understand the exploration spirit of seeking truth and truth, innovation and dedication in the exploration of science.

“智慧人类”展厅

"Intelligent Humans" exhibition hall

位于建筑三层北翼，布展面积4668 m²。

It is located in the north wing of F3 of the building and has the exhibition area of 4668 m².



该展厅按照“我们从哪里来？”“我们是谁？”“我们到哪里去？”的故事线，运用现代展览技术设计，揭示人类高级智慧的源泉，让公众在参与体验中，思考人类未来的发展方向。

The exhibition hall follows the story line of “Where do we come from?” “Who are we?” and “Where are we going?” , using modern exhibition technology, revealing the source of human advanced wisdom, and therefore make the public to think about the future direction of development of humanity in participating in the experience.

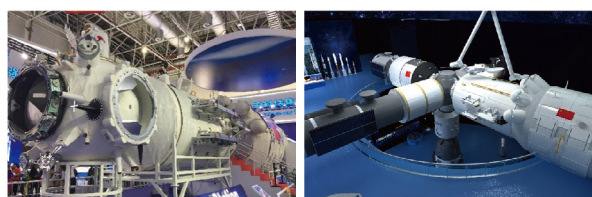


“交通天地”展厅

The "Traffic World" exhibition hall

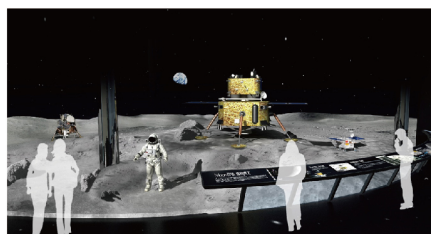
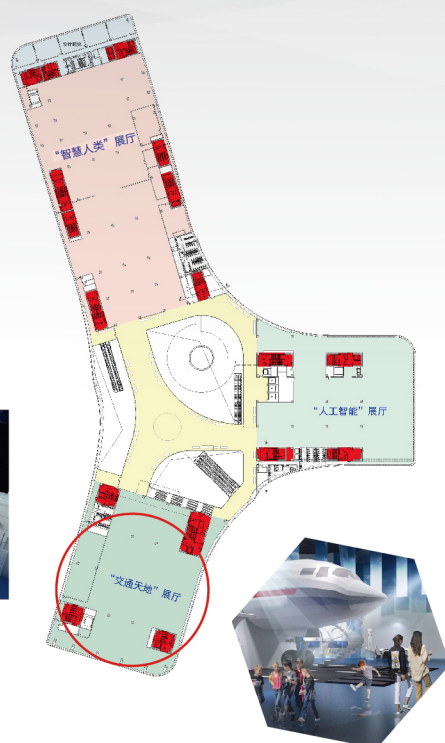
位于建筑三层南翼，布展面积3029 m²。

It is located in the south wing of F3 of the building and has the exhibition area of 3029 m².



该展厅以古往今来人类在交通领域的技术发展、技术成果和相关科学内涵为主要内容，以即将发射的中国空间站为核心展项，突出中国载人航天的飞天使命。同时，还展示各类交通工具与技术的发展历程，让公众了解科学技术的不断进步，带给人类生活的巨大变化，启发公众对未来交通的畅想与创意。

The exhibition hall takes the technological development, technical achievements and related scientific content of human beings in the field of transportation as the main content, takes the upcoming China space station as the core exhibition item, highlight China's manned space flight mission. At the same time, it also shows the development process of other transportation tools and technologies, so that the public can understand the continuous progress of science and technology, which brings great changes to human life, and inspire the public's imagination and creativity for future transportation.



“人工智能”展厅

The "Artificial Intelligence" exhibition hall

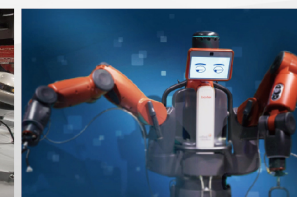
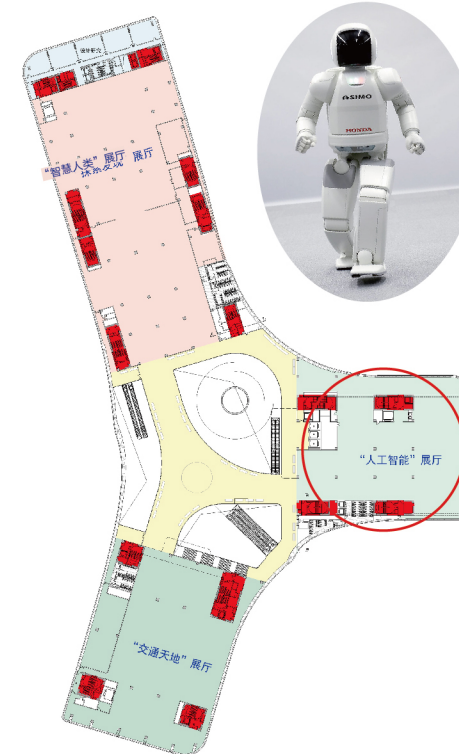
位于建筑三层东翼，布展面积3000 m²。

It is located in the east wing of F3 of the building and has the exhibition area of 3000 m².



该展厅围绕人工智能基础理论和关键技术，展示人工智能的发展历程和在各行各业的广泛应用，让公众感受人工智能的奇妙之处，领悟人工智能带来的便利与挑战，拥抱智慧生活，共创美好明天。

Focusing on the basic theory and key technologies of artificial intelligence, the exhibition hall shows the development process of artificial intelligence and its wide application in all walks of life, so that the public can feel the wonders of artificial intelligence, understand the convenience and challenges brought by artificial intelligence, embrace smart life and create a better tomorrow.



配套功能与设施

Supporting Functions and Facilities

除常设展览之外，还规划2个短期展厅、4个特效影院（球幕影院、巨幕影院、4D影院、飞行影院）、学术交流区、创新教育区、室外科学广场及其他配套设施。

In addition to the permanent exhibitions, it also plans 2 short-term exhibition halls, 4 special effects Cinemas (ball screen cinema, giant screen cinema, 4D cinema, flying cinema), academic exchange area, innovation education area, outdoor science square and other supporting facilities.

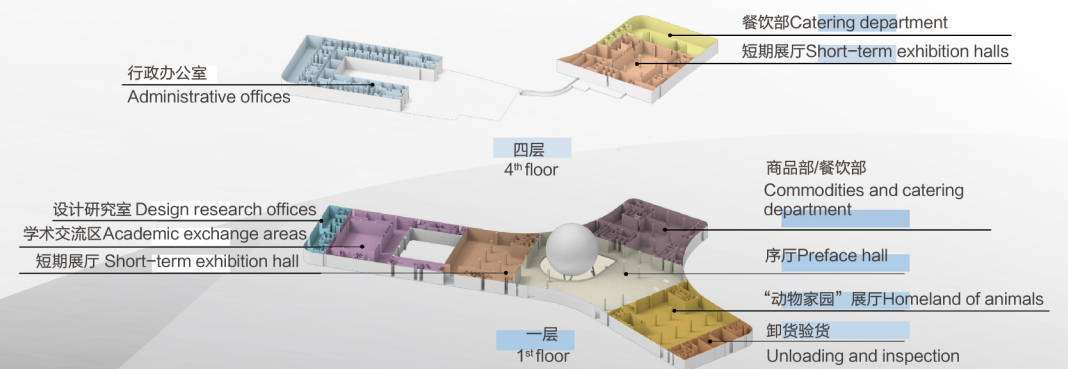


短期展厅

Short-term exhibition halls

设置2个短期展厅，一个位于建筑一层北翼，布展净面积约1550平方米，另一个位于建筑四层东翼，布展净面积831平方米。

It is planned to set up two short-term exhibition halls. One is located on the north wing of the building on the first floor with an exhibition net area of 1,550 square meters, the other is located on the east wing on the fourth floor with an exhibition net area of 831 square meters

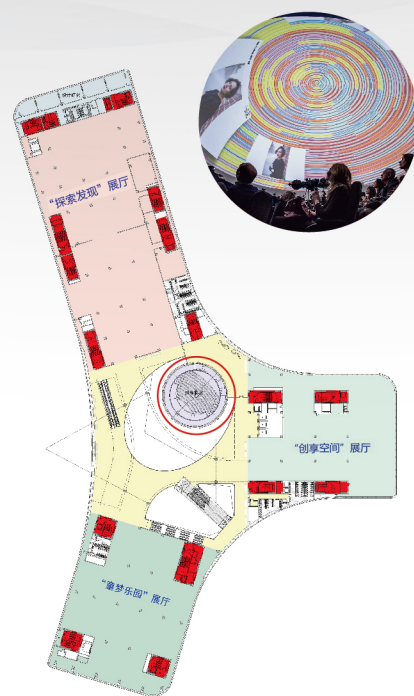


特效影院区

Special-effect theater area

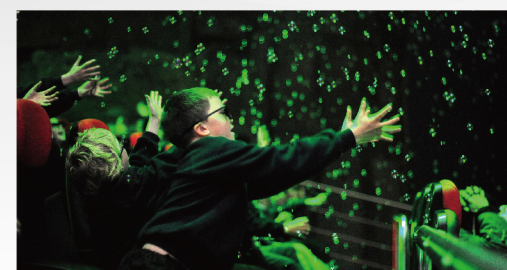
球幕影院位于中庭球体建筑上部，屏幕直径23米，设300左右座位。

The dome theater is located in the upper part of the atrium sphere, The screen is 23 meters in diameter with about 300 seats.



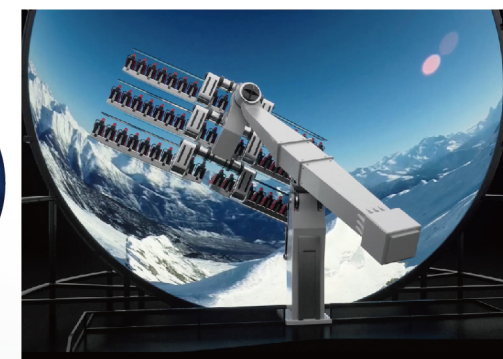
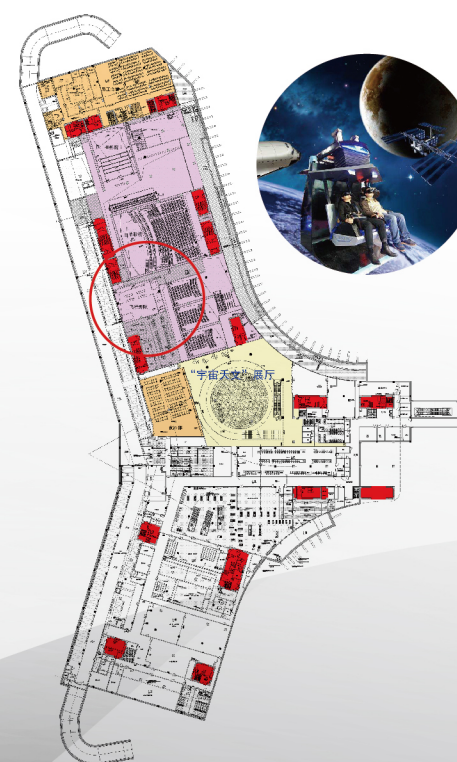
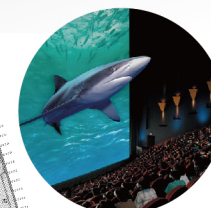
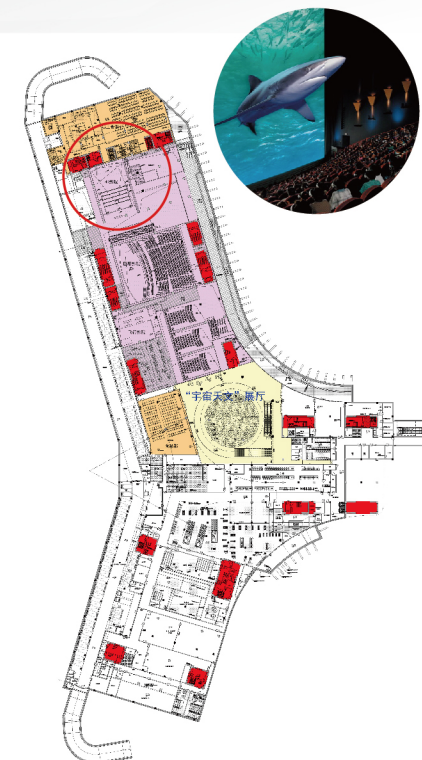
巨幕影院位于建筑北翼地下一层至一层，屏幕尺寸29×16米，设600左右座位。

The IMAX theater is located from the basement to the first floor of the north wing in the building. The screen size is 29 x 16 meters, with about 600 seats .



4D影院位于建筑北翼地下一层，屏幕尺寸15×8.5米，设200左右座位。

The 4D theater is located in the basement of the north wing in the building. The screen size is 15x 8.5meters, with about 200 seats .

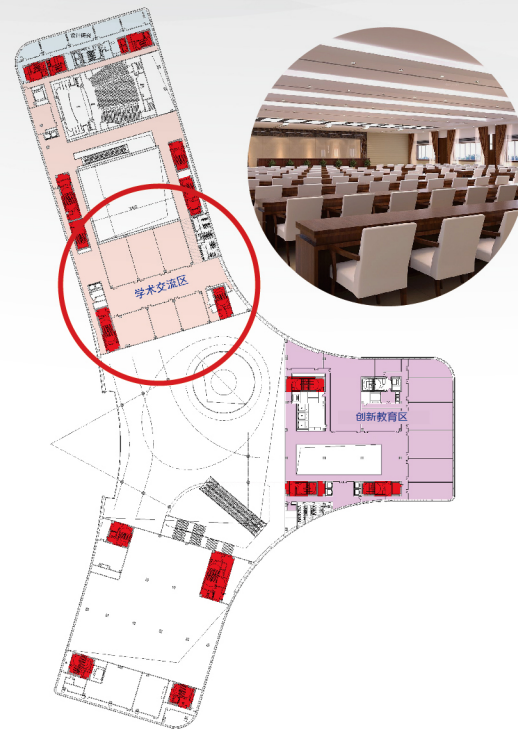


飞行影院位于建筑北翼地下一层，银幕为13米半球形银幕，设30座悬挂飞行座舱。

Flying cinema is located in the north wing of B1 of the building. The screen is a 13 meter hemispherical screen. There are 30 hanging cockpits in the cinema.

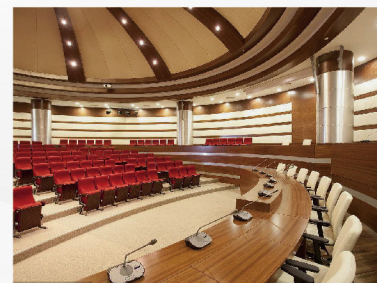
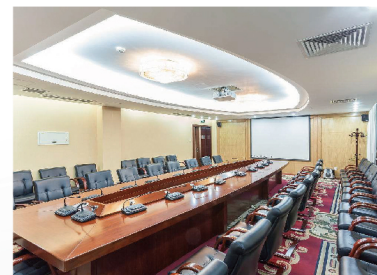
学术交流区

The academic exchange area



位于建筑北翼一层和一层夹层，设科普报告厅、多功能厅、学术交流厅等。

It is located on the first floor and its mezzanine of the north wing of the building. It includes a science report hall, a multi-function hall and an academic exchange hall.



创新教育区

The innovative education area



位于一层夹层东翼，规划面积1131.5㎡，拟设科学工作室、培训教室、实验室、科学竞赛场地等。

It is located in the east wing of inter layer of F1 of the building and has the planning area of 1131.5 ㎡. It is proposed to set up science studio, training classroom, laboratory, science competition field, etc.



Cranky Contraptions

室外科学广场 Outdoor Science Plaza

以象湖为依托，以主体建筑为核心，构建“一轴多园”的景观格局，一轴为东西主轴，多园为磁园、水园、季园、智园、圭园等构成的景观活动点，围绕科技馆建筑形成众星捧月之势。

Relying on Xianghu Lake and the main building as the core to construct the landscape structure of “one axis and multiple gardens”, one axis is the main axis of the East and West; the multiple gardens are the Magnetic Garden, the Water Garden, the Seasonal Garden, the Intelligence Garden, the Gui Garden. These landscape activity points locate around the museum building just like the stars bending to the moon.

结合主体建筑、圭表塔、象湖水域，设置室外标志性展品展项、科学雕塑、科学小品等。

Combined with the main building, the Guibiao Tower and the Xiang Lake waters, it is planned to set with outdoor iconic exhibition items, scientific sculptures, scientific sketches, etc.

