



ASTRO
NOMSKI
CENTAR
RIJEKA

OSOBNÁ ISKAZNICA ASTRONOMSKOG CENTRA RIJEKA

Lokacija:

Brdo Sveti Križ (45° 19' 29" s.g.š. i 14° 28' 59" i.g.d), 3 km od središta Rijeke

Površina:

545 m² zatvorenog i 325 m² otvorenog prostora

Trajanje radova rekonstrukcije i nadogradnje:

9 mjeseci (2008. - 2009. godine)

U realizaciji sudjelovalo:

5 arhitekata, 160 radnika i 12 inženjera tehničkih struka

Utjecaj na okoliš:

Nema štetnog utjecaja na okoliš; rast životnog standarda; mogućnost organizacije regionalnih, nacionalnih i internacionalnih manifestacija; prezentacija grada i zemlje; ostvarenje novih suradnji; jačanje turizma; lokalni gospodarski razvoj.

Od ideje do realizacije:

Zgrada u kojoj je danas uređen suvremeni Astronomski centar Rijeka nalazi se na grebenu brda Sv. Križ. Sagrađena je 1941. godine kao vojna utvrda u II. svjetskom ratu.

Smještena je unutar parka – šume s prirodnom submediteranskom vegetacijom, niskim drvećem i šikarom koju čini zajednica bijelog graba i hrasta medunca s nasadima crnog bora.

Na inicijativu i zalaganje članova Akademskog astronomskog društva Rijeka i podršku Grada Rijeke 2001. godine ugrađen je teleskop i pokretna astronomska kupola čime je osnovana prva riječka zvdjezdarnica.

Astronomski centar Rijeka formiran je interpolacijom nove dvorane planetarija u postojeću utvrdu zvjezdarnice. Ovakvo oblikovno rješenje ima i posebno simboličko značenje. Izdvajaju se zvjezdarnica smještena unutar sferne kupole (stvarna slika svemira) i nasuprot njoj planetarij, smješten u geometrijskom tijelu poliedra (simulirana slika svemira). I zvjezdarnica i planetarij dva su značajna i neizostavna sadržaja za bolje razumijevanje astronomije i svijeta koji nas okružuje u beskonačnim udaljenostima.

IDENTITY CARD OF THE ASTRONOMY CENTRE RIJEKA

Location:

Sveti Križ Hill (45° 19' 29" latitude N and 14° 28' 59" longitude E), 3 km from the city centre

Area:

545 m² of closed space and 325 m² of open space

Duration of building reconstruction and extension works:

9 months (2008 - 2009)

Made possible by:

5 architects, 160 workers and 12 technical engineers

Environment impact:

No harmful effect on the environment; improved life standard; organisation of various events made possible (i.e. regional, national and international events); pathway to new opportunities; tourism uplift; boost to local economy.

From idea to realisation:

The building of the contemporary Astronomy Centre Rijeka on the ridge of the Sveti Križ hill was built in 1941 as a military fortress in World War II.

Located in a park – forest with Submediterranean vegetation, small trees and shrubs with plant communities of Common Hornbeam and Downy Oak with plantations of Black Pine.

As a result of the initiative and effort of the members of the Academic Association of Astronomy Rijeka and the support of the City of Rijeka, a telescope and a rotating dome were installed in 2001, an act which marked the beginning of the first astronomy observatory in Rijeka.

Astronomy Centre Rijeka is formed by interpolation of the new planetarium into the existing observatory fortress. Such a solution bears a symbolic meaning, too. The observatory is set within the dome (a real image of the universe) and separated from planetarium set in the geometric shape of a polyhedron (a simulated image of the universe). Both observatory and planetarium are facilities indispensable for better understanding of the astronomy and the world that surrounds us in its infinite distances.



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DOBRODOŠLI U SUVREMENI SVIJET PLANETARIJA

...tisućama godina podižemo pogled prema nebu željni istraživati tamne dubine koje okružuju naš mali planet. Tek s ugašenim svjetlom i „upaljenim“ nebom, polukupola planetarija pretvara se u prekrasan svod kojim putuju zvijezde, planeti i druga nebeska tijela, od svitanja do sumraka, u simulaciji prekrasnih noćnih panorama. Kroz nezaboravnu kozmičku šetnju vode vas stručni animatori...

Riječ planetarij novolatinska je riječ kojom se opisivala sprava za prikazivanje kretanja planeta oko Sunca. Danas tu riječ upotrebljavamo za kružne dvorane sa svijetlo obojenom kupolom na koju se digitalnim projektorima projicira potpun izgled zvjezdanog neba. Osnovna namjena planetarija jest edukacija i popularizacija astronomije i srodnih znanosti, a može se koristiti i kao dvorana za razna predavanja ili druga događanja. Dvorana planetarija u Rijeci, izgrađena 2009. godine, opremljena je najsuvremenijom digitalnom tehnologijom što omogućuje doživljaj simulirane, ali i stvarne slike svemira. Projekcija se vrši pomoću digitalnog sustava s pet projektora. Njima se mogu prikazati oko 118.000 zvijezda, Sunce, Mjesec, planeti, Mliječni put i druge pojave na zvjezdanom nebu, razne slike kao i filmovi. Projektori također omogućuju promatranje noćnog neba u bilo koje vrijeme i s bilo koje lokacije na zemaljskoj kugli.

Najstariji poznati mehanizam koji je pokazivao (izračunavao) položaje objekata na nebeskom svodu pronađen je na grčkom otoku Antikyteri. Pretpostavlja se da datira iz 150. – 100. g. pr. Kr. Sredinom XVIII. stoljeća konstruiraju se prve dvorane sa sfernom kupolom i projektori za prikazivanje zvijezda i planeta. Moderne planetarium projektore prvi je konstruirao i izgradio Carl Zeiss 1924. godine u Njemačkoj. Tradicionalni elektromehanički/optički projektori bili su napravljeni od šupljikave kugle u čijoj se unutrašnjosti nalazio izvor svjetla. Kroz otvore na kugli svjetlo se projiciralo na projekcijsko platno sferne kupole. Točkice su predstavljale izgled zvijezda različitih veličina. Dodatkom posebnih projektoru mogli su se prikazivati planeti te ostala nebeska tijela. Danas se za istu svrhu koriste najsuvremeniji digitalni projektori.

Tehničke karakteristike planetarija

Dvorana planetarija: 52 sjedeća mjesta (klimatizirana)
Kupola: promjer 8 m
Projektori: In Space System (RSA Cosmos)

WELCOME TO THE MODERN WORLD OF THE PLANETARIUM

...for thousands of years we have looked up towards the sky, eager to explore the darkness that surrounds our tiny planet. Only with the lights out and the sky on does the hemispherical dome of the planetarium become a beautiful ceiling inhabited by stars, planets and other celestial objects, from sunrise to sunset, in a simulation of breathtaking night vistas. Go for a cosmic stroll accompanied by our expert activity leaders...

Planetarium is a New Latin word for a device that depicted the positions and the motion of the planets around the Sun. Today this word is used for theatres with a brightly coloured dome onto which a complete image of the night sky is projected by digital projectors. The main purpose of the planetarium is to educate and make astronomy and related fields more popular, but it can also be used as a lecture hall and a venue for various events. Built in 2009, the planetarium hall in Rijeka is equipped with the cutting edge digital technology making it possible to experience a simulated, as well as an accurate image of the universe. Digital system of five projectors can display about 118.000 stars, the Sun, the Moon, planets, the Milky Way and other objects in the heavens, various images and films. The projectors enable the observation of the night sky at any point in time and from any point on Earth.

The oldest mechanism used for displaying (i.e. calculating) positions of objects in the sky was found on the Greek island of Antikyteri and it is believed to date back to 150 – 100 BC. In the middle of the 18th century, first domed theatres and projectors for displaying stars and planets were built. Modern planetarium projectors were first constructed and built by Carl Zeiss in 1924 in Germany. Traditional electromechanical/optical projectors were made of a hollow ball with a light inside and a pinhole for each star ("star ball"). The light was projected through the pinholes on the dome screen and the dots presented stars of various sizes. Additional projectors were added to show planets and other celestial objects. State-of-the-art digital projectors are used nowadays for the same purpose.

Planetarium specifications:

Planetarium theatre: 52 seats (air-conditioned)
Dome: diameter 8 m
Projectors: In Space System (RSA Cosmos)



A S T R O
N O M S K I
C E N T A R
R I J E K A

DOBRODOŠLI U RIJEČKU ZVJEZDARNICU

...čak ni slavni Einstein nije slutio da je svemir u neprestanoj ekspanziji. Danas znamo da se on ubrzava. Sve do srednjeg vijeka smatralo se da je nebeski svod nepokretan. Danas znamo da nije tako: spiralna galaksija Andromeda približava se našoj brzinom od 500 tisuća kilometara na sat u kolizijskoj putanji. Sve o tajnama svemira, planetima, galaksijama, maglicama i zvijezdama otkrijte s nama...

Do pronalaska dalekozora u XVII. stoljeću astronomska opažanja obavljala su se golim okom, u starom vijeku s posebnih promatračnica, visokih kula i hramova, vrlo jednostavnim instrumentima za mjerenje kutova. Prve zvjezdarnice s ugrađenim mjernim instrumentima podignuli su Arapi u IX. stoljeću, a prva zvjezdarnica u Europi sagrađena je u XV. stoljeću. Kada je tehnika brušenja leća u XIX. stoljeću naglo napredovala, počele su se graditi velike moderne zvjezdarnice.

Davne 1974. godine u Rijeci je osnovano Akademsko astronomsko društvo s ciljem razvoja i popularizacije astronomije, srodnih znanosti i pratećih tehničkih i informatičkih disciplina među mladima i građanstvom. Već od samog osnutka javila se potreba za izgradnjom zvjezdarnice koja će zadovoljiti potrebe za ozbiljnim radom na području astronomije i koja će omogućiti popularizaciju znanosti i edukaciju građana. Značajniji pomak prema realizaciji dugogodišnjeg sna započinje krajem osamdesetih godina da bi se konačno 2001. godine izgradnjom riječke zvjezdarnice i ostvario.

Zvjezdarnica je znanstvena ustanova opremljena astronomskim instrumentima i uređajima za promatranje i proučavanje nebeskih tijela i astronomskih pojava.

Opremljena zvjezdarnica s astronomskim teleskopom MEAD LX 200, CCD kamerom, računalima i ostalom prijenosnom astronomskom opremom omogućava stručan i edukativan rad. S riječke zvjezdarnice mogu se promatrati Sunce, Mjesec, planeti Sunčeva sustava, bliže promjenjive zvijezde, mala tijela Sunčeva sustava (kometi, asteroidi) te galaksije i ostali magličasti objekti.

Tehničke karakteristike teleskopa:

Teleskop: MEADE LX 200
Otvor objektiva: 16" (406,4 mm)
Maksimalno povećanje: do 800 puta

WELCOME TO THE RIJEKA OBSERVATORY

...not even famous Einstein could have grasped the idea of an ever expanding universe. Today we know it is accelerating. Up until medieval times it was believed that the night sky was immobile. Today we know better: the spiral Andromeda Galaxy is approaching ours at the speed of 500,000 kilometres per hour on a collision trajectory. Join us on our space adventure and unveil the mysteries of the universe, planets, galaxies, nebulas, and stars...

Until the invention of the telescope in the 17th century, the astronomical observations relied on only what the naked eye could see from the special observation posts, high towers and temples, and by using only simple instruments for measuring angles. First observatories with built-in measuring instruments were designed by the Arabs in the 9th century, and the first European observatory was erected in the 15th century. As the lens grinding technique flourished in the 19th century, the construction of big modern observatories started.

In 1974, Academic Association of Astronomy was founded in Rijeka, aiming at developing astronomy and related fields and making them more accessible to the young population and general public. Ever since the early days of the Association, there has been a call for an observatory that would meet the needs of serious astronomical work and become a place of interest and education for a wider public. A more significant step forward in realising a long-lived dream was made in the late 1980s, but it wasn't until 2001 that the dream finally came true. That was the year the Rijeka Observatory was built.

The observatory is a scientific institution equipped with astronomical instruments and devices for observing and studying the celestial objects and astronomical events.

The observatory contains the astronomical telescope MEAD LX 200, CCD camera, computers and other portable astronomical equipment which allows both professional and educational activities to be carried out. The Rijeka Observatory enables watching the Sun, the Moon, planets of the solar system, closer changeable stars, smaller bodies (e.g. comets, asteroids), as well as galaxies and nebulae.

Telescope specifications:

Telescope: MEADE LX 200
Clear aperture: 16" (406,4 mm)
Maximum Practical Visual Power: up to 800x