

**INTERNATIONAL COMPETITION N° 001/SVMA/2018**

CONCESSION FOR THE PROVISION OF THE MANAGEMENT, OPERATION AND MAINTENANCE SERVICES OF PARKS *IBIRAPUERA, JACINTHOALBERTO, EUCALIPTOS, TENENTE BRIGADEIRO FARIA LIMA, LAJEADO* AND *JARDIM FELICIDADE*, AS WELL AS THE EXECUTION OF WORKS AND ENGINEERING SERVICES.

**DRAFT CONTRACT**

**ANNEX III – SET OF SPECIFICATIONS OF THE CONCESSIONAIRE**

**APPENDIX VIII – GUIDELINES FOR THE ELABORATION OF THE EDUCATIONAL AND CULTURAL PLAN FOR THE PLANETARIUM AND MUNICIPAL SCHOOL OF ASTROPHYSICS PROFESSOR ARISTÓTELES ORSINI**

## **GENERAL OBJECTIVE**

This appendix, an integral part of ANNEX III – SET OF SPECIFICATIONS OF THE CONCESSIONAIRE, aims to present the minimum guidelines for the elaboration of the Educational and Cultural Plan for the Municipal School of Astrophysics and Planetarium and to guarantee the maintenance of the educational and cultural functions of these equipments, as well as to value its historical importance, preserving its activities as a national and international reference in the diffusion of science and culture.

## **THE PLANETARIUM AND THE MUNICIPAL SCHOOL OF ASTROPHYSICS PROFESSOR ARISTÓTELES ORSINI**

The Planetarium Aristóteles Orsini located in the Ibirapuera Park was inaugurated in 1957. The building of the Municipal School of Astrophysics, in turn, was inaugurated in 1961. These institutions, together with the Planetarium Prof. Acácio Riberi, in the Carmo Park, make up the group called "Planetariums of São Paulo", linked to the Technical Division of Astronomy and Astrophysics – UMAPAZ 2, the Open University of Environment and Culture of Peace (Portuguese acronym: UMAPAZ), which is the Department of Environmental Education of the Municipal Secretariat of Green and the Environment of São Paulo (Portuguese acronym: SVMA).

The main space of a planetarium is its projection room. The one of the Ibirapuera has capacity for three hundred (300) people, composed by a dome of 18 m in diameter and chairs arranged in concentric circles. This dome allows the projection of images across its hemispherical surface and is now used for the projection of a starry sky through the Zeiss Starmaster ZMP brand projector. The main spaces of this building are:

- Projection room, with 300 m<sup>2</sup>;
- Main hall for the reception of the public with about 180 m<sup>2</sup>;
- Mezzanine, originally designed to house exhibitions, with approximately 220 m<sup>2</sup> (mezzanine external diameter is 38m and internal 24 m);
- Four work rooms and a recording studio, occupying around 40sqm;
- Technical room (approx 15 m<sup>2</sup>), projection room auxiliary.

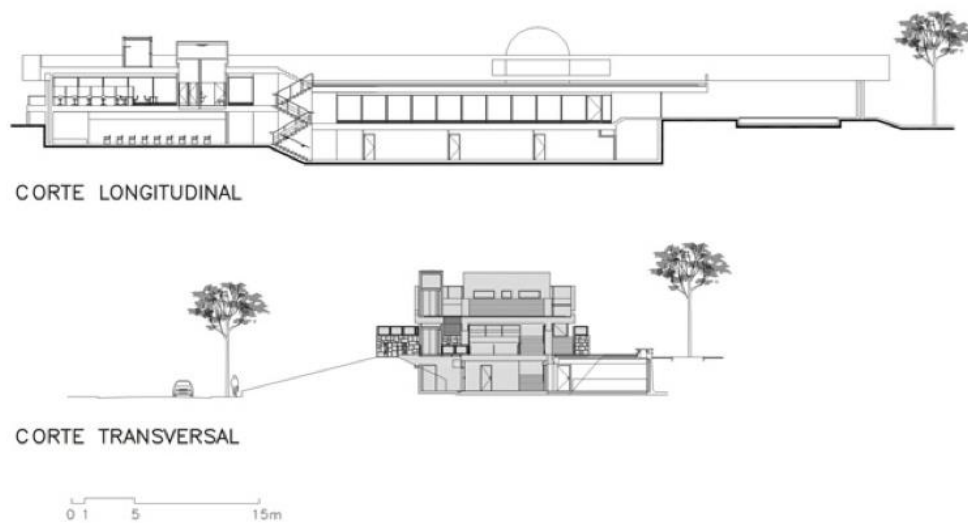


The School of Astrophysics, in turn, has six floors, interspersed (each half height of the other, on opposite sides).

The main spaces of this equipment are:

- On the ground floor: a rectangular hall for exhibition and reception of the public, with approximately 130 m<sup>2</sup> (22m x 6m).
- A flight of stairs above the ground floor there is another rectangular space with 160 m<sup>2</sup> (10 m x 16 m), including two bathrooms of 10 m<sup>2</sup> each; there is also a terrace overlooking the lake from the park, with more than 45 m<sup>2</sup> (2.3 m x 20 m).
- In the basement there is a total space of about 280 m<sup>2</sup>, initially designed to house two traditional classrooms and a computer lab, as well as a workspace for the technical and administrative staff;
- A flight of stairs above, still underground, is an auditorium with capacity for one hundred (100) people, with 100 m<sup>2</sup> (approx 10 m x 10 m), with a stage of 23 m<sup>2</sup> (3.5 m x 6.5 m).
- Next to the auditorium, on the same floor, is a space of 75 m<sup>2</sup>, separated into three (3) rooms, including an astronomy laboratory.
- The upper floor - the terrace - is divided into two spaces of 190 m<sup>2</sup> and 150 m<sup>2</sup>, separated by a flight of stairs. The largest portion has an observatory dome of 5 m in diameter (now inoperative) and the smallest portion has, besides the water box (28 m<sup>2</sup>) a radio astronomy room (2 m x 1.5 m).

#### **Longitudinal and Transversal Cut of the Municipal School of Astrophysics**



Legend (from top to bottom): *Longitudinal Cut; Transversal Cut.*

## **OPERATIONAL GUIDELINES**

The guidelines in this appendix are intended to guide the development of the Educational and Cultural Plan for the Municipal School of Astrophysics and Planetarium, in order to enable the monitoring and evaluation, by the GRANTING AUTHORITY, of the operation and activities carried out on these equipments, without prejudice of compliance with the other actions foreseen in all OPERATIONAL PLANS, as set forth in ANNEX III – SET OF SPECIFICATIONS OF THE CONCESSIONAIRE.

The CONCESSIONAIRE shall carry out activities based on scientific, educational, cultural, informational programs and on the integration and approximation of USERS with the natural sciences, astrophysics, astronomy, and other areas of knowledge, contributing to education, citizenship, scientific diffusion, USERS' leisure, following the guidelines set forth here.

The guidelines in this document are divided into five perspectives:

- Specialized Technical Team;
- Building Program: Conservation, Maintenance and Security;
- Program of Exhibitions and Cultural Programming;
- Program of Educational Service and Special Projects; and
- Guidelines for the creation of the Technical Curator Council.

### **1. SPECIALIZED TECHNICAL TEAM**

The CONCESSIONAIRE shall maintain in its panel of experts a team of technical experts and managers capable of operating the Planetarium and Municipal School of Astrophysics, adopting one or more of the different possible models and formats for the provision of a technical and administrative body of, for example, teachers hired by class time for the courses and lectures or a body of autonomous peoples responsible for the execution of the sessions. In addition to the scientific staff and managers capable of developing the technical specificities of the equipment, qualified professionals in the areas of computer science, information technology, graphic design and social communication must support in order to maintain and expand the activities performed.

Minimum Guidelines:

- The CONCESSIONAIRE should appoints a manager responsible solely for the equipment Planetarium and Municipal School of Astrophysics Professor Aristóteles Orsini;
- The CONCESSIONAIRE should has in its panel of contractors or hire, whenever necessary, professional and / or company specialized in the maintenance of the projection equipment, currently the Zeiss Starmaster ZMP;
- The CONCESSIONAIRE should maintains specialized technical staff to minister the sessions and courses that will occur in these equipments;
- The CONCESSIONAIRE should maintains reception staff for the said sessions and courses that will take place in these equipments;
- The CONCESSIONAIRE shall maintains a professional staff to meet the cleaning and safety demands of such equipment, in accordance with the provisions of the respective OPERATIONAL PLANS;

## **2. PROGRAM OF MAINTENANCE OF BUILDINGS AND UPDATE OF EQUIPMENT**

In addition to the actions foreseen in the Plan for the Conservation of Infrastructures, Buildings, Equipment and FURNITURE, some specific actions for the Planetarium and the School of Astrophysics must be observed by the CONCESSIONAIRE.

The buildings must remain in full conditions to receive the USERS. In this way, permanent building maintenance is required. In addition, the Planetarium of Ibirapuera and the School of Astrophysics have underground floors and, because they are inside a region previously swampy in the PARK, they need special care to avoid infiltration and humidity, which can damage their sensitive equipment. The full functioning of the air-conditioning equipment is also vital for the equipment to work to the satisfaction.

The permanent preventive and corrective maintenance of the control system and projection room equipment is also mandatory. The stock of spare parts for the projector should also be considered, as the maintenance of this equipment requires, in many cases, the importation of specific parts. In this sense, a preventive maintenance, which makes it possible to exchange worn parts even before there is a break, avoiding interruptions in the service to the public, is fundamental for the institution to achieve its objectives.

It will be the responsibility of the CONCESSIONAIRE to keep up-to-date technological equipment, in up-to-date standards compared to other planetariums in the world, such as Hayden in New York, Griffith in Los Angeles, Adler in Chicago and Universcience in Paris and the Science Museum in Nagoya.

In addition to the projectors, the Ibirapuera Planetarium is equipped with sensitive technological articles, such as telescopes, spectroscopes, celostat, digital displays, antennas for radio-observation, among others. For this reason, it is necessary that the maintenance costs of these items are considered by the CONCESSIONAIRE.

Minimum Guidelines:

- Perform preventive and corrective maintenance, including periodic cleaning of storm drains;
- Perform preventive and corrective maintenance of air conditioning equipment, elevators, infrastructures and computer systems and safety equipment, such as hydrants;
- Perform the preventive and corrective maintenance of the furniture in the internal area of the buildings;
- Ensure updating of projection equipment;
- Ensure updating of the central projection system;
- Ensure the maintenance and updating of sensitive technological articles, such as observation and related equipment;
- Ensure a minimum stock of replacement parts with higher breaking rates and parts whose useful lives are coming to an end;
- Guarantee the updating of the educational and cultural equipment of the collection of the Planetarium and Astrophysical School Professor Aristóteles Orsini;

### **3. PROGRAM OF EXHIBITIONS AND CULTURAL PROGRAMMING**

In order to fulfill the objectives of the Planetarium and the Municipal School of Astrophysics, the CONCESSIONAIRE must maintain a permanent program, including sessions, exhibitions and cultural programming, guided by the following principles:

- Promote transformative experiences in the contact of USERS with the sciences, sensitizing the visitors and arousing their curiosity;
- Encourage the creation of relationships between science, technology and USERS;
- Allow the development of long-lasting public policies that accompany the lives of USERS in different phases, considering contemporary scientific and technological developments;
- To provide USERS with a space for reflection on the issues of the city, integrating them with the notion of planetarium citizenship, exploring the multi, inter and transdisciplinary character of the sciences, especially astronomy.

Minimum Guidelines:

- Create conditions for all types of accessibility in the sessions, exhibitions and activities developed;
- Hold temporary exhibitions, summit sessions with various scientific themes, courses, workshops, lectures and events that enable qualified population access to culture, education, scientific literacy, contributing to the formation of the public;
- Special attention to the development of activities on specific dates, such as the anniversary of the Planetarium and the Astrophysical School of Professor Aristóteles Orsini, school holidays; “Virada Cultural”, astronomical events;
- Keep open to the public from Tuesday to Sunday, in all months of the year, except on previously reported days, in case of maintenance, improvement of buildings or assembly of exhibition;
- School visits, for sessions, exhibitions and other activities;
- Observations of the sky, day and night;
- Summit sessions with varied topics for the general public and specific summit sessions for schools and teacher education; and
- Partnership with other municipal, state and federal cultural equipment.

#### **4. PROGRAM OF EDUCATION AND SPECIAL PROJECTS**

The CONCESSION must consider the management of such equipment, actions, programs and other related initiatives aimed at promoting education, culture and science. One of the main focuses of the activities of this equipment should be the provision of sessions and other activities to schools, their students and teachers. Following the guidelines below:



- To offer educational services to groups of visitors, preferably through scheduling, in order to increase the possibilities of taking advantage of exhibitions for tourists, senior citizens, groups of professionals and others;
- Contribute to formal education by seeking partnerships with the public and private education networks, enabling the best use of content for school education;
- Perform a minimum of twenty (20) projections of thirty (30) minutes of duration per week in the planetarium dome, distributed on at least three different days;
- Conduct at least one free weekly session (citizen session);
- Conduct at least six (6) course of ten (10)-hour classes per semester;
- Perform the minimum of an annual thematic exhibition on astronomy and related subjects, of at least sixty (60) days duration;
- Develop and implement projects and actions that promote social inclusion, bringing to the equipment diversified, marginalized social groups and with greater difficulty in accessing cultural equipment.
- Provide training courses and workshops for teachers and educators in general;
- Promote partnerships with other educational institutions, aiming to broaden teachers' knowledge, such as increasing the scope of the Planetarium and the Municipal School of Astrophysics;
- Stimulate the integration between culture, education and the arts and their interdisciplinary relationships with science; and
- Perform at least one annual activity in each of the other PARKS related to the activities performed in said equipment.

## **5. TECHNICAL CURATOR COUNCIL**

The CONCESSION should contemplate the establishment of an elective, unpaid and exclusive technical curator council for the monitoring of the management of the Planetarium and Astrophysical School Professor Aristotle Orsini. Consisting of notable scientific, educational and cultural, the mentioned council will have as objective to evaluate, advise and supervise the activities and fulfillment of the goals in the equipment in question, also contributing to the elaboration and fulfillment of the operational and educational and cultural plans of the Planetarium and the Municipal School of Astrophysics Professor Aristóteles Orsini.

THE TECHNICAL CURATOR COUNCIL

The CONCESSIONAIRE will have the term of three (3) months counted from the DATE OF THE STARTING ORDER to organize and create the technical curator council for the Planetarium and the Municipal School of Astrophysics Professor Aristóteles Orsini, which will be composed of:

- Two (02) representatives appointed by the GRANTING AUTHORITY, one of whom will be the Chairman;
- Two (02) representatives appointed by the CONCESSIONAIRE;
- Two (02) well-known independent technical representatives appointed by SVMA's Technical Division of Astronomy and Astrophysics.

#### COUNCIL'S MEMBERS

After the formation of the first technical curator council of the Planetarium and the Municipal School of Astrophysics Professor Aristóteles Orsini, the mandate and elections / substitution and other norms will be given as follows:

- The term of office of the members of the technical curator shall be two (2) years, with two (2) renewals for each chair of the board of directors;
- All directors have the right to vote with equal weight; and
- Decisions of the technical curator council shall be taken by simple majority, with a minimum of four (4) members present, with the Chairman having the casting vote.

#### ATTRIBUTIONS OF THE TECHNICAL CURATOR COUNCIL

- a) Collaborate to elaborate and fulfill the Educational and Cultural Plan of the Planetarium and the Municipal School of Astrophysics Professor Aristóteles Orsini, developed by CONCESSIONAIRE;
- b) Accompany, suggest and approve management activities practiced by the CONCESSIONAIRE in these equipments;
- c) Accompany, suggest and propose changes in activities related to conservation and structural expansion, educational programs, cultural programs, maintenance, upgrades, equipment exchanges and USER satisfaction; and
- d) Encourage and issue an opinion on agreements, partnerships or other instruments that increase the capacity to expand activities in these equipments.

#### OTHER ATTRIBUTIONS AND RULES OF THE TECHNICAL CURATOR COUNCIL

- a) The regular meetings of the Technical Curator Council shall take place twice a year;
- b) Extraordinary meetings of the Technical Curator Council shall take place whenever necessary and may be convened with the request and consent of three (3) members, with a term of ten (10) days prior to the due convocation; and
- c) The functioning of the technical curator council and the attributions of the members shall be established in its social status.

## 6. GOODS

The operational instrumental collection of the Planetarium and Astrophysical School Professor Aristóteles Orsini covers more than a thousand items, in addition to its library. Given the scope of possibilities of scientific dissemination, the collection counts with on equipment of diverse areas of science. Not limited to exclusively teaching equipment, there is also a range of extremely complex technical equipment used for the production of sessions and other activities that take place inside and outside the projection room.

The following equipment list presents the main goods that compose the collection of the Planetarium and Municipal School of Astrophysics, classified, under the CONTRACT, as REVERSIBLE GOODS.

GROUP	DESCRIPTION OF THE REVERSIBLE GOODS
Planetarium Projector	German Zeiss Starmaster ZMP Projector: Dome-capable celestial sphere simulator up to 18m diameter, includes mechanical opto projection of planets, ground movements and atmospheric effects.
	30 KODAK Projector Projectors that assist in planetarium sessions.
Audio Recording Studio	1 Audio Computer
	1 Behringer Sound Table
	1 pair of monitors



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GROUP	DESCRIPTION OF THE REVERSIBLE GOODS
	1 Microphone for recording
Telescopes	A schmidt-cassegrain LX200GPS 14"aperture and f / 10 focal length telescope, equipped with electronic focusing, searchers, equatorial wedge, tripod, AutoStar II, without source.
	4 Maksutov-Cassegrain MEADE ETX-125 5"aperture and f / 15 focal length telescopes equipped with tripod, fountain and AutoStar I (1 without case).
	2 LXD 75 refractor telescopes with 6"aperture equipped with German equatorial mounting with accompaniment motor and tripod, searcher, AutoStar I and tripod.
	1 telescope Maksutov-Cassegrain Zeiss Meniscas 180/1800 f / 10 of 1971, equipped with searcher, Coudè prism, German equatorial mount with accompanying motor and tripod.
	5 MEADE LX200GPS schmidt-cassegrain telescopes 12"aperture and focal length f / d 10, equipped with electronic focus, searchers, equatorial wedge, tripod, AutoStar II and source.
Telescopes Peripherals	Eyepieces MEADE: (6) 6.4 mm, (6) 9.7 mm, (8) 12.4 mm, (1) 15 mm, (4) 20 mm, (9) 26 mm, (6) 32 mm, (2) 40 mm, (1) UltraWide 8.8 mm, (1) Ultra Wide 34mm.  Zeiss Eyepieces: (1) 9mm, (1) 16 mm, (1) 25 mm, (1), 40 mm.
	Thousand Oaks Type ++ 2 Solar Blocking Filters (3 for ETX 5 "and 4 for LX200 for 12"
	3 SBIG Model ST7-XME CCDs, equipped with original accessories
	2 SBIG Model ST10_XME CCDs, equipped with original accessories
	2 Spectrographs SBIG SGS
	5 Sunspoters Learning Technologies, approx. 50 cm tall



**PREFEITURA DE  
SÃO PAULO**  
VERDE E MEIO AMBIENTE

GROUP	DESCRIPTION OF THE REVERSIBLE GOODS
	1 SBIG STV self-guiding system with accessories
Meteorites	Lunar: Dhofar 467 (2.4 x 1.2 x 0.08 cm, 0.5 g) Dhofar 123 (4.5 x 2.3 x 0.2 cm, 5.1 g)
	Martian: NWA 2737 (0.5 x 0.7 x 0.1 cm, 0.1 g)
	Santa Luzia: Siderite (32 x 15 x 12 cm, 22 kg, irregular), possible independent fragment of the second largest meteorite in Brazil.
	Siderite: Gibeon (11.5 x 10.0 x 0.5 cm, 215.7 g)
	Chondritic: Allende (4.0 x 4.5 x 0.9 cm, 20.3 g)
	Acondritic: NWA 9448 (3.1 x 1.8 x 2.4 cm, 32.9 g) and NWA98222 (8 x 5 cm, 180 g)
	Impactitos: Moldavito (Besednice) (2.4 x 1.6 x 1.7 cm, 4.9 g)
Natural collection	Fossil of Mesosaurus Brasiliensis in sandstone (60 x 25 x 7 cm)
	Petrified tree trunk (21 x 14 x 25 cm, 12 kg)
	Fish in sedimentary rock in varvito (35 x 21 x 8 cm, 8 kg)
	Fossil of possible claw in varvito (11 x 5 x 15 cm, 2 kg)
Permanent Exhibitions	Fixed ceiling panel of the municipal school of astrophysics, with visual exposure and 2 14" LCD TVs + separate totem with 20" LCD TV.
	Solar clock type equatorial quadrant, fixed to the ground to the west of the Ibirapuera planetarium (about 2 m in diameter and 1,80 m in height).
	Armillary sphere about 2 m in diameter, fixed to the ground to the east of the planetarium Ibirapuera
High tech teaching materials	1 Optical Bank CIDEPE Master Santana EQ045G complete
	1 Set for the determination of spectral rays of Mercury CIDEPE

GROUP	DESCRIPTION OF THE REVERSIBLE GOODS
	1 set of spectral tubes with feeder for gas spectroscopy
	1 Set for interferometry CIDEPE EQ073 (Michelson-Morley)
	1 Absorption Spectrophotometer 3B Scientific model U21830 with box
	1 Motic Series B1 microscope
Low-tech teaching materials	18 Globes with models of celestial sphere, Planets, Moon and Earth.
	Educational instruments for spherical astronomy and position (used by Teacher Acácio Riberi - has historical value).
Telescope Construction Laboratory	Foucault interferometer for optical surface testing.
	A complete telescope building laboratory room with 6 concrete benches, granite sink and MDF shelves.
Historical collection	Old Theodolite Fauth & Co. of the first half of the 20th century.
	Newtonian telescope constructed by a student (Leonel) of the Municipal School of Astrophysics in the course of Construction Amateur of Telescopes and left for purposes of exhibition - has historical value.
	Telescope in wood with square tube, being the first telescope of the Amateur Construction Course of Telescopes by AAASP.
	Bronze Refractor Telescope with handmade wooden tripod from the early 20th century - incomplete.
	Old Nautical Bitacre with compass Faithful Freddy / H. Hughes & Son
	Zeiss Planet III Projector (Mark III) purchased in 1952 - stored in two cubic boxes of approx. 2 m from the side, in the Cemucam

GROUP	DESCRIPTION OF THE REVERSIBLE GOODS
	Park - has a high historical value
	Instruments and scientific equipment of the former science and technology museum, belonging to the historical and museological collection of the Planetariums: 3 cubic boxes with approx. 2 m of side, stored in the Park Cemucam
Library	Map library with several types of maps, besides a diversity of historical celestial charts.
	Small (between 5 and 10 thousand copies between books and periodicals and more than 100 records in other media - digital, magnetic and electronic), but a significant library with rare works of ancient astronomy, including period, in their original languages acquired in its more than sixty (60) years of history. Didactic books and scientific dissemination of several areas of knowledge, but mainly of Physics, Mathematics, Astronomy and Geology.

REVERSIBLE GOODS shall, in accordance with the provisions of the CONTRACT, form an inventory to be prepared and maintained by the CONCESSIONAIRE.

Such items shall be subject to updates and maintenance and, in the event of irreparable damage, the replacement shall be by other equipment of equal or equivalent value.

If the irreparable damage is in any historical or museological item, the concessionaire must integrate another equivalent cultural item or indemnify the Municipality of São Paulo.

It will be incumbent upon the Curator Council to evaluate and measure the size of the damage, as well as how best to repair and replace it, as well as for the preservation of the general collection.