



Ministry of Culture
Government of India



**National Council of Science Museums
33, Block-GN, Sector-V,
Salt Lake, Bidhan Nagar,
Kolkata- 700091**

Notice for Selection of Architect for architectural and consultancy services relating to Setting up of Science Centre (Category-II) at Bikaner, Rajasthan.

National Council of Science Museums (NCSM) is planning to set up a Science Centre Category-II at Bikaner, Rajasthan. The architectural firms shortlisted (list of shortlisted agencies enclosed) against our empanelment advertisement published in Central Public Procurement Portal, Govt. of India & in our website in June, 2020 are requested to submit their conceptual scheme for the proposed project.

The brief requirement of the Science Centre, Category-II is enclosed for your reference. **You may submit your scheme/concept design (both hard & soft copy) along with your financial offer (on lump sum basis) in separate sealed envelope latest by 3.00 PM on 06/06/2022 at National Council of Science Museums, 33, Block- GN, Sec-V, Salt Lake, Bidhan Nagar, Kolkata - 700091.**

Further, you may come for a discussion/presentation of your scheme before an expert panel at **National Council of Science Museums, 33, Block- GN, Sec-V, Salt Lake, Bidhan Nagar, Kolkata – 700091. The date for the discussion / presentation shall be intimated to you in due course of time.**

You may contact Mr. Saikat Sikdar (Superintending Engineer, NCSM, Hqrs.), Mob no. 8777536210 E-mail: s.sikdar@ncsm.gov.in for any further clarification, if required.

Encl.:

- I. List of shortlisted Architects.
- II. Architects' Brief

I. List of Empaneled Architects for Science Centre (Category-II)

1. M/s Vastukala, Mumbai
2. M/s Somaya & Kalappa Consultants Private Ltd, Mumbai.
3. M/s Space Ace, Gurugram.
4. M/s Biplob Nandy and Associates, Siliguri.
5. M/s Partha Das & Associates, Kolkata.
6. M/s Rajappa Shobana Architects, Chennai.
7. M/s Vishwannath Associates, Bangalore.
8. M/s Aangan Architects, Surat.
9. M/s Bhargava & Associates (P) Ltd., New Delhi.
10. M/s Haven Consultants Pvt. Ltd, Kolkata.
11. M/s Deore Dhmane Architects, Nashik.
12. M/s Reza Kabul Architects Pvt. Ltd., Mumbai.
13. M/s Architect Harish Tripathi & Associates, New Delhi.
14. M/s S J K Architects, Mumbai.
15. M/s Sukanya & Associates, Kolkata.
16. M/s MAAS, New Delhi.
17. M/s D. O. Nikam Architect and Project Management Consultant, Pune.
18. M/s 4 Line Architects, Guwahati.
19. M/s Vastukaar, Kolkata.
20. M/s Mathur Ugam & Associates, New Delhi.
21. M/s KMBD Architect & Engineers Consortium Pvt. Ltd., Siliguri.
22. M/s TAC Design Pvt. Ltd, New Delhi.
23. M/s Vistaar Architects and Planners, Navi Mumbai.
24. M/s Subir Kumar Basu, Consulting Architects & Engineers, Kolkata.
25. M/s Chelsea West Architects Pvt. Ltd., New Delhi

26. M/s Haven Architects, Kolkata.
27. M/s STUP Consultants Pvt. Ltd., Mumbai.
28. M/s Global Engineering Services, Navi Mumbai.
29. M/s ESPACE, Kolkata.
30. M/s Arcop Associates Private Ltd., New Delhi.
31. M/s RT & Associates Pvt. Ltd., Noida.
32. M/s MJ Consultancy, Silchar .
33. M/s VYOM, New Delhi.
34. M/s Archohm Consults Pvt. Ltd., Noida .
35. M/s Design Forum International, New Delhi .
36. M/s AAKRITI, Kolkata .
37. M/s Architect Hafeez Contractor, Mumbai.
38. M/s Collage Design Pvt. Ltd., Mumbai.
39. M/s Karan Grover & Associates, Gujarat.
40. M/s Meinhardt EPCM (India) Private Limited, Bangalore.
41. M/s Sunando Dasgupta and Associates, Delhi.
42. M/s Kothari & Associates, Kolkata.
43. M/s Bose Brothers Architects, New Delhi.
44. M/s OCI Architects, Oscar & Ponni, Chennai.
45. M/s Vastushilpalaya Consultancy Pvt. Ltd., Kerala.
46. M/s Flying Elephant Studio, Bangalore.
47. M/s Arch -En-Design, New Delhi.
48. M/s I N I Design Studio Private Ltd., Ahmedabad.
49. M/s Dhrumataru Consultants and Construction, Hyderabad.
50. M/s Saakaar Foundation, Chandigarh.
51. M/s OPOLIS, Mumbai.
52. M/s Plural Design Consultants Pvt. Ltd., New Delhi.

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Architects brief for the proposed Science Centre (Category-II)
at Bikaner, Rajasthan.

1. Concept

National Council of Science Museums (NCSM), an autonomous organisation under the Ministry of Culture, Govt. of India, is the apex body of Science Centres in India. It is primarily engaged in popularising science and technology among the students in particular and common public in general and in creating a scientific temper in society. NCSM administers 25 science centres and museums all over India, situated in metropolitan cities, state capitals and district headquarters and it has developed 24 more Science Centre which have been handed over to respective States and Union Territories. It also conducts mobile science exhibitions throughout the country and organises travelling exhibitions in India and abroad.

A Science Centre (Category- II) provides activity based learning environment to inculcate a spirit of inquiry, foster creative talent and create scientific temper in the community as a whole. It is characterised by its two-pronged channel of communication - exhibits and activities. While the exhibits, both indoor and outdoor, are mostly interactive, the demonstrations and training programmes are fully participatory and help children and the adults alike to learn the basics of science through fun and enjoyment. The Science Centre provides facilities such as hands-on exhibit oriented exhibition gallery both indoor and outdoor, activity areas, exhibit development laboratory, auditorium for lectures, demonstrations, innovation spaces, office, visitor interpretation areas etc.

2. Land Area & Location

Requisite land has been earmarked for the Science Centre (Category- II) at Bikaner Rajasthan having an area of 05(five) Acre (approx.). The location of the plot is at JOR BEER Residential Scheme, Block-C , Bikaner, Rajasthan, PIN Code-334001 and is connected to Jodhpur Jaipur bypass approx. 600 mtr. away.

3. Content

The building comprising various facilities will have a covered area strictly not more than 2000 Sq.mtr in modules or otherwise at split level. The area includes complete circulation area. It will have possibilities for a lateral expansion of further 2000 Sq.mtr. in future. The entire plan should be done in such a way that the building in the first phase with 2000 Sq.mtr. looks complete. The building could be single / double storied with outdoor Science Park in the foreground/background. The main visitors' entrance to the building shall be at the ground floor level of the building. Lift and ramp facility

may be thought for accessibility of differently abled visitors. Separate entrance to group **II and group III facilities**, as described below shall be provided at the back of the building. The campus will have a parking area under shades of trees. The entire open area surrounding the building will have shady trees, fruit bearing trees for birds and small bushy trees, flower beds, lawns and hedges, large number of participatory outdoor exhibits operating on basic principles of science and technology which will constitute a kind of outdoor Science Park. The Science Park may also have small water pools, solar & wind energy exhibits and picnic area with drinking water, snack bar and visitor sitting areas & toilets etc. for visitors. The building will **have three components**, details of which are given below:

Group I - Main Exhibition Area (900 Sq.mtr.) approx.

Group II - Visitors' Activity Area (600 Sq.mtr.) approx.

Group III - Exhibit Development Laboratory & Office Spaces (250 Sq.mtr.) approx.

Group I - Main Exhibition Area (900 Sq.mtr.)

The following facilities will be accessible to general visitors through the main entrance of the building:

- i) **Reception Hall** – A reception counter with glass cabinet/shelves for souvenirs, wall space for displays public announcement, small cubicles with glass front for Duty Officer, first-aid room, space for placing two or three interesting exhibits at the centre, visitors seating facility, information kiosks, visitor interpretation area & souvenir counter.
- 150 Sq.mtr.

- ii) **Two permanent exhibition** halls with maximum wall space and 15A electrical power plug with switch and fuse on the walls at about 5-metre interval and on each of the central pillars, electrical power points at the ceiling in central area (in between pillars). A suitable gate with a clear opening of 2.0 metre X 2.4 metre to secure entrance to each hall.

This area will need special requirements as follows:

- Each hall should have long space without interfering columns.
- Suitable windows for ventilation.

- 500 Sq. mtr.
(250+250)Sq. mtr.

- iii) **Temporary exhibition** hall having the same features (Structural/Architectural) as permanent exhibition halls with storage space for exhibit cleaning materials etc. with one Souvenir counter/space with a visibility and accessibility from all or/and maximum sides.

- 250 Sq. mtr.

Group II - Visitors' Activity Area (600 Sq.mtr.)

This group shall have a separate entrance at the ground level so that the visitors can enter at times when the main exhibition hall of the centre may be closed to the public.

There shall, however, be also an interlinking inside the building with the main exhibition halls. Following facilities are to be provided:

- i) An air-conditioned full-fledged auditorium for 150 persons with provision for putting up extra 25 Chairs on the aisles, if required, acoustically treated to a reasonable extent, dais for seating 6-8 persons with a small green room toilet & V.I.P. room attached on the dais and one suitable Conference Room for minimum 15 persons.

-275 Sq. mtr.

- ii) Activity Hall with space for playing with scientific toys and kits, space for keeping our laboratory tables on chemistry, Biology, Aero modelling, Physics, Electronics, Mechanical fittings etc. for Innovation Activities wall space for placing racks and shelves and for display of information charts, space for inflatable dome planetarium, attached open terrace for sky observation and for conducting various other outdoor activities.

-225Sq. mtr.

- iii) Separate toilets for visitors (Ladies and Gents) with janitor room, water cooler (outside) and a small lobby in between auditorium and activity/training halls.

-100 Sq. mtr

Group III – Exhibit Development Laboratory, Stores, Administrative office etc. (250 Sq.mtr.)

This area is entirely for the staff of the centre and will, therefore, be isolated from the public areas and have a separate entrance on the ground floor from the backside of the building. There should be sufficient space for office, a small maintenance workshop, stores and toilet. A separate enclosure for Head of the centre with attached toilet may be included.

-250 Sq. mtr.

Suggestive guidelines

- a) **Around 15 % area may be kept for circulation purpose however in all case the overall covered area has to be restricted within 2000 Sq.mtr.**
- b) **General floor to floor height may be considered as 5.20 mtr.**
- c) **Provisions may be kept for installation of solar roof top panels**
- d) **In the construction of the building priority/preference may be given to local materials, labour, expertise in order to encourage local community participation. Use of renewal energy, energy saving devices may be given top preferences.**
- e) **The building should be designed keeping applicable fire safety norms of the location and National Building Code (NBC)**

4. Outdoor Science Park with visitors' toilet block

- 10,000 Sq. mtr. approx.

This will be a landscaped open air area where interactive exhibits will be placed aesthetically in the lush greenery of the park with attractive garden pathways. Apart from the exhibits, the Science Park will contain picnic area for visitors and medicinal plant corner etc.

Separate toilets for visitors (Ladies and Gents) with janitor room etc. covering a minimum space of 50 Sq. mtr.

The science park will be developed in such a way that it will merge with the greenery and available ambience. The science park will also have lawns, shrubs and hedges along the garden pathway and tall trees in the boundary as per the requirement of landscaping. Typically, the visitors will first pass through the science park and then enter the science centre building.

5. Capacity:

The Science Centre is being planned for an average intake of about 500 visitors per day (over 8 hours). A typical holiday crowd may reach a figure as high as 2000.

6. Finance & Time:

The cost of building construction and other services shall not exceed ₹**8.04 Crore** which includes Landscaped Science park work, pathways, outside lighting, Science park toilet block, etc. The Science Centre will be opened to the public in 30 months from the date of start of the construction work, in which the time for construction of building and services shall be 21 months.

7. Architectural Feature:

The architecture will reflect the right combination of attractive design, economy, efficient, functional utilisation of space, cost effectiveness, environment friendly and should include the local architecture of the area.

8. Electrical Power:

The electrical peak load requirement for the building and periphery shall be 150 KVA.

9. Time Schedule (in months):

0 – 2 ½ Architectural planning, model of buildings, approval of statutory bodies, preparation of tender documents, foundation design including investigation of soil.

2 ½ - 4 All execution drawing for civil work including structural drawing, tender documents for electrical, acoustic work etc.

I. Evaluation of bid for selection of architect: -

Evaluation shall be made under Quality and Cost Based Selection (QCBS) System. Under QCBS, the technical proposals based on available data in the bid and personal presentation before the committee will be allotted weightage of **80%** and only agencies securing minimum 70% marks in technical evaluation shall be considered technically qualified. Technical evaluation shall be based on the following criteria as appended below:

Aesthetic & innovativeness	Functionality	Cost effectiveness	Ease of Construction	Integration & future development
20 Marks	40 Marks	20 Marks	10 Marks	10 Marks

Financial proposals (**lump sum basis**) of only those agencies who are technically qualified shall be opened publicly on the date and time specified to be notified separately, in the presence of the agency's representatives who wish to attend. Financial proposals will be allotted weightage of **20%**.

Financial proposals will be checked and the bidder will be ranked accordingly. The lowest financial bid would secure **20 marks** and the score(s) of the other bidder(s) shall be evaluated as per illustration cited below:

Bidders	Lumpsum cost given in the financial bid	Calculation	Normalized Score
Bidder L-1	1000	$1000*20/1000$	20.00
Bidder L-2	1100	$1000*20/1100$	18.18
Bidder L-3	1250	$1000*20/1250$	16.00

The numerator will be the charges as lumpsum fee quoted by L-1 and denominator will be the bidder charges as lumpsum fee quoted by respective bidders. **The work shall be awarded to the agency securing the highest combined score in technical & financial evaluation.**

Services required from the Architect and necessary terms and conditions for the architectural work relating to Science Centre (Category-II) , at Bikaner, Rajasthan.

1. Section-wise break up of covered area of construction as approved by the competent authority of the National Council of Science Museums. This must be adhered to, subject to the ceiling of cost while preparing the architectural plan and realistic estimate of the building.
2. All services such as electrical, sanitary and plumbing, water supply, fire detection and alarm, fire fighting and other installations mandatory under statutory regulations prevailing in the State of Rajasthan, air-conditioning of covered areas as specified, acoustic treatment wherever essential and other special fixtures and installations necessary for the exhibition halls (but excepting movable furniture and fixtures) shall be included in the work. The Architect shall provide periodic supervision and checking in the interest of the project, as may be decided from time to time by the Council to the extent required for ensuring quality of work and materials used, workmanship of the contractor and shall be responsible for the same. Necessary travel, food & lodging arrangements for the architect or his representatives at the proposed place of construction / Zonal office of the Council / NCSM headquarters as and when required shall be made by the architect at **no extra cost** for their visit. Under normal circumstances, 8 to 10 visits of the Architect and/or his representatives are generally required during the tenure of the project. However, number of visits may vary as per actual site situation. Day-to-day construction supervision at site **shall not be in the scope of the Architect.**

3. The Architect shall furnish a brief technical specification for the geo-technical investigation work as may be necessary for them to design the structures and other facilities of Sub-Regional Science Centre and also furnish to the Council a list of names of a fairly reasonable number of reputed agencies whom they consider competent to carry out the geo-technical investigation as detailed in the brief specification.
4. **It shall be the responsibility of the architect to get the structural design & drawing of the Science Centre building vetted through IIT's / NIT's / Central Building Research Institute(CBRI) at their own cost. Original copy of the design vetting report and vetted drawings along with structural design calculation to be submitted to NCSM along with the tender document for the construction work at no extra cost.**
5. There shall preferably be one composite tender for civil, sanitary & plumbing, electrical, air-conditioning and acoustic treatment works.
6. Locally available durable raw materials shall be considered for use for construction as far as practicable.
7. All detailed drawings necessary for execution of the work stamped good for construction are to be submitted by the Architect at the time of preparation of the tender papers in Stage-II so that no work is held up for lack of drawings after the award of work to the contractors.
8. Architect shall not make any alterations, deviations, additions or omissions from the approved design, rates and estimates without the prior approval of the Council and all instructions to the contractor affecting the rates and provisions of contracts shall be issued only after obtaining prior approval of the Council.
9. The lumpsum remuneration as mentioned below is inclusive of supplying all drawings (minimum six sets) required for construction work and drawings necessary for statutory approval of local authorities, however it is exclusive of fees that may be paid to local authorities against official receipt for sanction of Plans or cost of advertisement of tenders for the project before the award of work to the contractors.
10. In consideration of the aforesaid services duly rendered, the professional fees of the Architect shall be reimbursed in 4 (four) stages as stated below:

Stage-I: Inspection of the site, study of local requirements, preparation of master plan including landscape architecture, science park, garden, roads etc. preparation of preliminary plan, elevation, section and perspective drawings of the building and structure for covered area of about 2000 sq.mtr., preparation and submission to the Council of an architectural model of the entire plot with science park, building and other elements in the scale of 1:200; preparation and submission to the council **two sets** of identical architectural model of the building in the scale of 1:100; The architectural models shall be prepared with durable wood, acrylic and such other materials to show the exterior as well as interior views.

10% of Architect's quoted lump sum fees.

Obtaining approval of local authority for the construction after obtaining written approval of National Council of Science Museums on the master plan and preliminary estimate.

---- **10% of Architect's quoted lump sum fees.**

State-II: Preparation of detailed plans, sections, elevation and perspectives, layout and circuit drawings, structural calculations, specifications, schedule of quantities and detailed estimates for civil, sanitary, plumbing, electrical air-conditioning, acoustic and all other works as necessary for the proper functioning of Science Centre and as entrusted by National Council of Science Museums. Detailed drawings ready for execution in metric scale (1:100 or 1:50 depending on the sizes of the elements or structures), realistic estimate for cement and steel, preparation of bar bending schedule and submission of completed tender papers in computer print out formats in adequate numbers for calling tenders. Detailed estimate shall be prepared based on the rates of C.P.W.D. Schedule plus approved percentage to bring the rate up to date as allowed by the appropriate authorities or prevailing local PWD schedule of rates may be adopted. For special items not covered under the C.P.W.D. schedules, rates may be worked out on the basis of budgetary quotations received from manufacturers/vendors. The detailed plans and estimate shall be prepared by taking all existing factors and site conditions into consideration and no major change involving increase in expenditure is permissible after acceptance of the detailed plan by National Council of Science Museums. **(40% of Architect's quoted lump sum fees.)**

- a. On release of the tender document (both soft & hard copy) for the work and submission of the structural design vetting report:

---- **10% of Architect's quoted lump sum fees.**

- b. After finalisation of tender procedure and selection of prospective construction agency:

---- **10% of Architect's quoted lump sum fees.**

- c. After submission of all 'Good for Construction' drawings of the building, structure etc. (civil part):

---- **10% of Architect's quoted lump sum fees.**

- d. After submission of all 'Good for Construction' drawings for Electrical, HVAC, S&P and other services etc. :

---- **10% of Architect's quoted lump sum fees.**

Stage-III: Scrutiny of the submitted tenders, preparation of comparative statements and furnishing recommendations thereon; minor amendments of drawings as and when the necessity arises during the stages of construction and furnishing all necessary clarifications to the contractors. Review of bar bending schedules and fabrication drawings to be prepared by Architect. Periodic supervision at site as and when necessary for interpretation of drawings and specifications and to ensure that the execution of work proceeds generally in accordance with drawings, specifications and conditions of contract; checking of contractor's bill and issue of certificate for interim bills whenever so needed by Council.

---- **25% of Architect's quoted lump sum fees based on progress of work on pro rate basis.**

Stage-IV: Checking of final bill of contractors with the assistance of engineers of Council, submission of completion certificate in the format required by the appropriate authorities. Preparation of required number of sets of completion drawings of civil and other works as finally executed at site which may be necessary for reference and records of the council and other local authorities based on the feedback data to be collected by the Architect's representative during their periodic supervision at site in consultation with the Engineers of the council and make-up drawings showing modifications, receiving from the site.

Balance fees of the Architect after completion of work.

11. The cost of the project shall be the actual cost of work including cost of building, structure, sanitary, plumbing, mechanical and electrical work, ducts, electrical fitting and fixtures, air-conditioning work, acoustic work landscape on which the Architect have rendered professional services but shall exclude the cost of the following:
- a) Cost of Land
 - b) Fees for plan approval and services connection deposits viz. Water supply, Sanitation, Electricity, Telephones, etc. fees payable by the Council to the local statutory bodies.
 - c) Establishment cost of the client.
 - d) Fees of the Architect.
 - e) Other contingent expenditure like press advertisement, publicity, legal expenses etc.

Enclosures: site plan, contour plan, satellite map of the plot.

SITE PLAN SHOWING THE THE PART PLAN OF JOR BEER RESIDENTIAL SCHEME BLOCK - C, BIKANER

PROPOSED SITE ALLOWED TO DEPARTMENT OF SCIENCE AND TECHNOLOGY FOR ESTABLISHMENT SCIENCE CENTRE SHOWN THUS

U.D.H. ORDER NO. - P.2U.I.T./BIKANER/2018

DATED :- 13 / 4 / 2018



AS PER BUILDING BY LAWS 2017

TOTAL AREA OF LAND = 217800.00 SQFT = 5 ACRE OR 8 BIGHA
(400'-0" X 544'-6")

DRAWN BY :-

Signature
11/5/18

CHECKED BY :-

Signature
01.5.18
Sr. D/M

Signature
1.5.18
JEN

संनिय
नगर विकास न्यास
बीकानेर








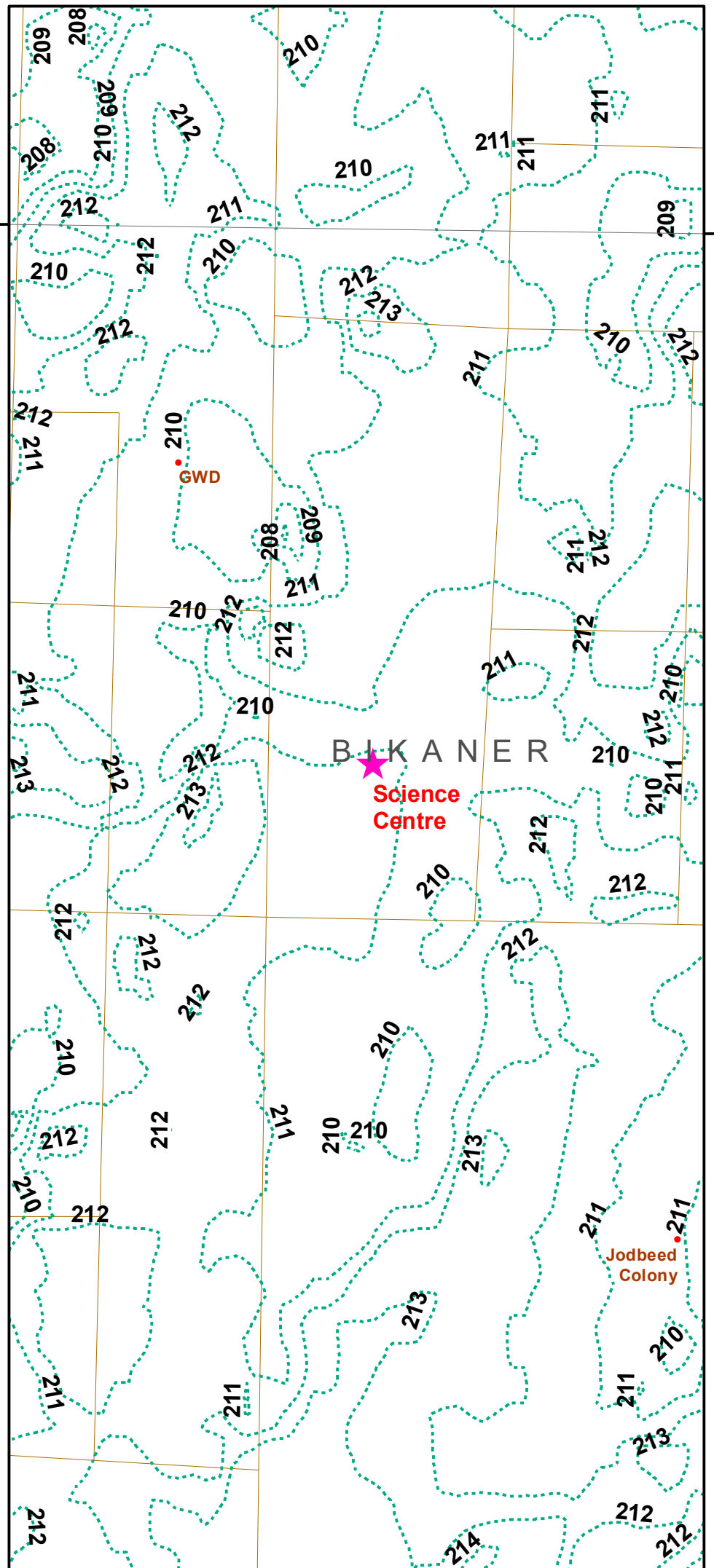
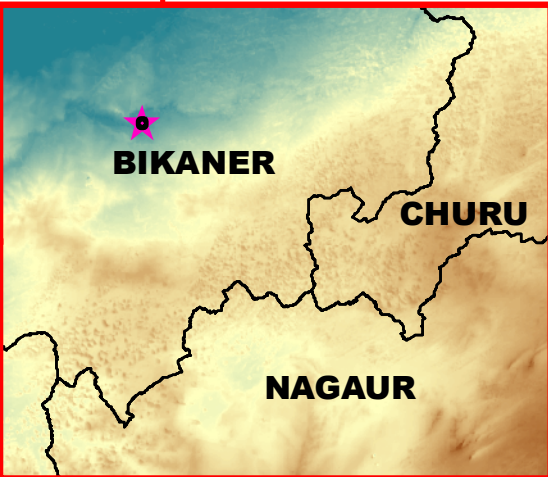
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D.T.F.

PROPOSED LOCATION BIKANER SCIENCE CENTRE CONTOUR MAP



Legend

-  Proposed Location
-  Location
-  Contour
-  City Roads
-  District Boundary










27°59'0"N

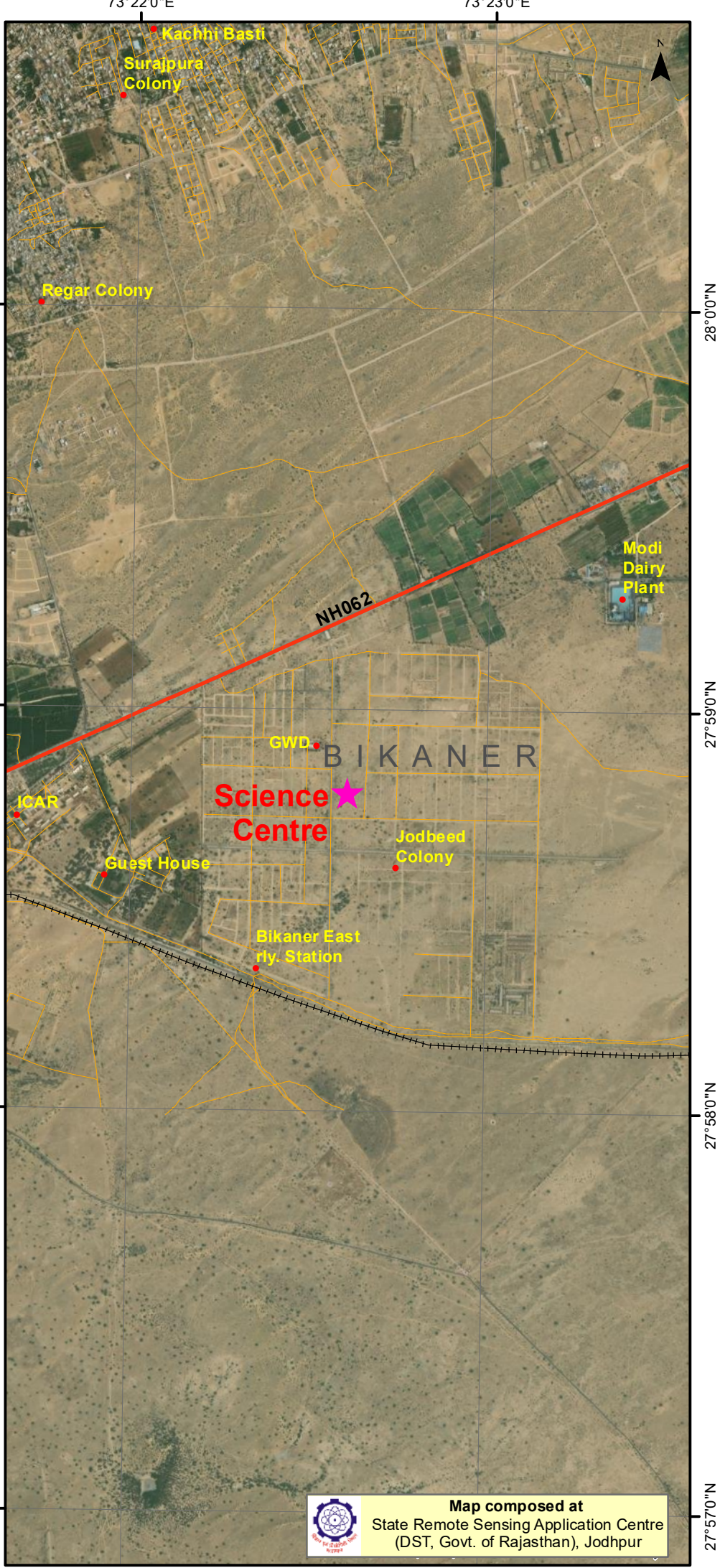
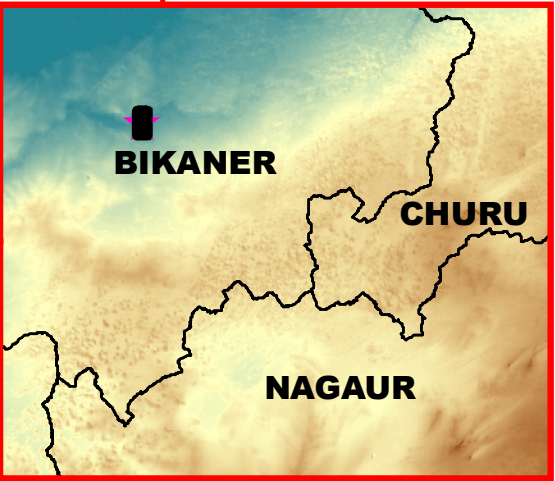
100 Meters 

Map composed at SRSAC (DST, Govt. of Rajasthan), Jodhpur

PROPOSED LOCATION BIKANER SCIENCE CENTRE

Legend

-  Proposed Location
-  Location
-  Rail
-  Rail network
-  National Highway
-  City Roads
-  District Boundary



Map composed at
State Remote Sensing Application Centre
(DST, Govt. of Rajasthan), Jodhpur

1 Kilometer