

Tune in: What did Buddhist monks hear when they meditated in Goan caves in the 6th century?

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[A Mumbai-based sound research lab is preserving the history of heritage structures through their natural ambient noises.](#)



[Recording the acoustic heritage of a church in Goa. | Instagram.com/sound.codes](#)

What does the heritage of a community sound like? A song, a story, a lecture on history? According to the Mumbai-based sound research laboratory, Sound.Codes, the sound of Goa's heritage might be the ambient noises of a cave carved in the 6th century. Sound.Codes has been cataloguing the acoustic signatures of heritage structures across India for the past three years. For its latest project, it visited over 50 heritage sites around Goa to record the characteristic ambient noises. An audio installation, titled **The Acoustic History of Goan Heritage**, based on those recordings has been set up at a science and arts festival being held in Panaji, Goa, called [The Story Of Space](#). The nine-day festival, which ends on November 19, explores and creates learning opportunities across science, art, culture and philosophy.



[Recording the acoustic heritage of a church in Goa.](#)

[The installation occupies two rooms at Fundação Oriente, a heritage house turned art gallery. It recreates the architectural history of Goa in the form of sound through a special audio-mapping process. "When we say 'acoustic signatures', we mean the process of how a sound physically propagates and interacts in any given space," said Akash Sharma of Sound.Codes. "Each space has a specific geometry and material surroundings with its own texture. We capture this information. It's like the pulse of a space being captured – what we call 'the digital reverb' of a place."](#)

Recording the acoustic signature of a 6th century cave in Goa. Image credit: SoundCodes/Facebook.

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Aguada Fort Reverbs BEST HEARD ON HEADPHONES A freshwater spring within the fort provided water supply to the ships that used to stop by. This is how the fort got its name: Aguada, meaning Water The Water Tank at Aguada Fort has the capacity to storing 2,376,000 gallons of water , making it one of the biggest freshwater storage of the time.

Sharma is a sound artist and researcher, like his colleague and collaborator Snehal Thomas Jacob. For their recordings, the two visited churches, temples, mosques, caves and some heritage homes in Goa.

"Places of worship have a longer reverberant or resonance, so the sound stays in one space for a longer time, and this reverberant creates a feeling of spirituality – the affect is similar in a cave," said Sharma.

The sound data being played at the festival has been acquired from locations such as Fort Aguada, Rivona caves, Tambdi Surla temple and the ruins of the Church of Saint Augustine.

In an Instagram post, Sharma and Jacob demonstrate the sounds of the Rivona caves. The caves in South Goa are believed to have been dug by Buddhist monks in the 6th century for meditation. The audio in the Instagram video inspires the sensation of being underground in a cool, dark space. This feeling is heightened by the sound of trickling water from the two perennial springs within the caves.

Rivona Cave Sounds BEST HEARD ON HEADPHONES The Rivona Caves are prehistoric natural caves believed to be inhabited up until 6th - 7th century. At the caves one can see a "Pitha", which is carved out of laterite and is believed to have served as the seat of the teacher. The caves are also considered one of the few examples of Buddhist influence visible in Goa today

One of Sharma's favourite structures to create an audio map in Goa was the Penha de França church in Bardez. "The architect and designer of the Penha de Franca clearly accounted for the nature surrounding the structure while designing the church," said Sharma. "It has the typical long reverberant church sounds, but since it is also built next to a river, the sound of the water is recorded too. The roof is constructed in a way, so that when it rains it creates a very surreal acoustic environment. We could hear all kinds of water dripping sounds and noises everywhere."

Ka : Mapping the acoustics at Penha De Franca

Sound.Codes' installation at Fundação Oriente is divided into two rooms. One is a pitch dark room set up with four speakers in each corner. "The idea is to explore the sounds by walking around the dark room," said Sharma. "Each sound takes you to a different era staring from the architecture remaining from the pre-historic period – like the natural cave sounds. We have tried to showcase how the Buddhist caves eventually became spaces for Brahmanical chanting.

"The whole audio is around 80 minutes and every one square kilometre roughly represents about 150 years," he added.

The installation in the second room is more interactive. A timeline on the floor gives context of what the exhibit covers and allows the visitor to stroll through the history of architectural space and time. Each marking on the floor represents a year, the information for which then reflects on a screen set up in the room.

Sound.Codes has done similar projects in other states, like Assam, Himachal Pradesh, Maharashtra, Delhi and Karnataka. "Over time, all historical spaces will witness loss of context and content, which includes loss in acoustic data," said Sharma. "It is important to preserve this experience. Sound is just an alternate exploration of information and an experience, rather than an institutionalised and systematically coded information on a visual or oral tradition."

First published by [Scroll.In](https://scroll.in)