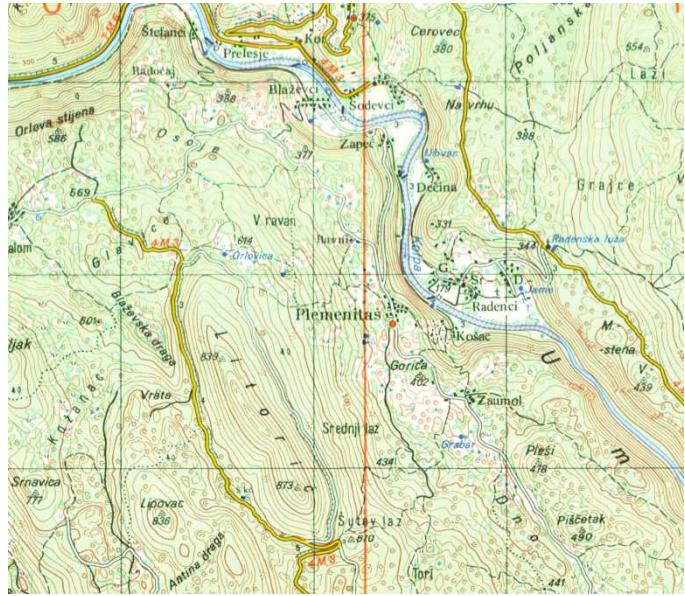


# Matrices. Space for Freedom

## Project and exhibition



The *Matrices* educational artistic-scientific project was launched in 2016 as a field course offered by the Graphics and Teaching Department of the Fine Arts Academy of the University of Zagreb (Plemenitaš Graphic Workshop). The workshop leaders were Prof. Art. Ines Krasić, Prof. Art. Mirjana Vodopija and Assist. Iva Ćurić. The project developed over several years, thematically linked to researching graphic media and the concept of the matrix in the wider field of the arts and sciences.

The third workshop within the *Matrices* project was held from 6 to 14 July 2019 in the Plemenitaš Art Workshop in Gorski Kotar. Each day, lectures, presentations, discussions and workshops were held, through which the students extended their knowledge of space from the architectural, urbanist, cartographic, sociological, physical, mathematical and other points of view.

Prof. Emer. Miljenko Lapaine gave two lectures and organised a tour of

the village with the aim of finding a trigonometric point on a nearby hill.

The lecture entitled *Cartography and Art* was based on maps as coded images of geographical reality which depict selected objects or properties, created according to the authors' creative choices, and used when spatial relations are of paramount importance. The lecture covered the history and types of maps and their development, pictorial maps, their authors, scales, ways of recording terrain, and modern digital orthophoto maps. At the end, the international cartographic exhibition organised every two years which member countries of the International Cartographic Association (ICA) was mentioned. Croatia is a member country. This year, the exhibition was held in Tokyo.

The lecture *The Shape of the Earth* looked at methods used in geodetic research of the Earth and its shape throughout history, from Archimedes

(researching the Earth's shape based on the balance of fluids), through Ruđer Bošković and his measurement of the arc of the meridian degree and discussion of the shape and size of the Earth, achievements which had a huge influence on the later development of cartography, to modern cartographic methods. The idea was raised of installing a monument in Varaždin to mark the final point of the Vienna meridian. The arc of this meridian was measured in the 18th century and begins near Brno, ending at the cathedral in Varaždin. The Czechs and Austrians have marked this important geodetic achievement with monuments, but the Croats have not yet done so. The students and teachers at the Fine Arts Academy were requested for their help in achieving this idea.

After inspecting some topographic maps and cadastral plans which show Plemenitaš, a tour was organised, which included the church of St. Anthony the Hermit

# Matrice. Prostor slobode

## Projekt i izložba

Edukacijski umjetničko-istraživački projekt Matrice pokrenut je 2016. godine kroz terensku nastavu Grafičkog i Nastavničkog odsjeka Akademije likovnih umjetnosti Sveučilišta u Zagrebu (Grafička radionica Plemenitaš). Voditeljice projekta su red. prof. art. Ines Krasić, red. prof. art. Mirjana Vodopija i asist. Iva Ćurić. Taj je projekt prerao u višegodišnji, tematski vezan uz istraživanje grafičkog medija i pojma matrice u proširenom polju umjetnosti i znanosti.

Treća radionica u okviru projekta Matrice održana je od 6. do 14. srpnja 2019. u Oblikovnoj likovnoj radionici Plemenitaš u Gorskom kotaru. Svakodnevno su se održavala predavanja, prezentacije, diskusije i radionice, kroz koje su studenti proširivali postojeća znanja o pojmu prostora s arhitektonskog i urbanističkog, kartografskog, sociološkog, fizikalnog, matematičkog i drugih gledišta.

Prof. emer. Miljenko Lapaine održao je dva predavanja i organizirao obilazak mjesta s idejom pronalaženja trigonometra na obližnjem brdu.

Predavanje *Kartografija i umjetnost* baziralo se na karti kao kodiranoj slici geografske stvarnosti koja prikazuje odabrane objekte ili svojstva, nastaje stvaralačkim autoriskim izborom, a upotrebljava se onda kad su prostorni odnosi od prvorazredne važnosti. Govorilo se i o povijesti i vrstama karata i njihovu razvoju, slikovnim kartama, njihovim autorima, mjerilima, načinima snimanja terena i suvremenoj digitalnoj ortofotokarti. Na kraju predavanja spomenuta je međunarodna kartografska izložba koja se

organizira svake dvije godine i na kojoj sve zemlje članice Međunarodnoga kartografsko društva (International Cartographic Association – ICA) mogu izlagati karte, a Hrvatska je jedna od njih. Ove godine to je bilo u Tokiju.

Predavanje *Zemljin oblik* obradilo je metode geodetskog istraživanja Zemlje i njezina oblika kroz povijest, od Arhimeda (istraživanje Zemljina oblika na temelju ravnoteže tekućina) preko Ruđera Boškovića, njegovih mjerenja luka meridijanskog stupnja i problematiziranja oblika i veličine Zemlje kao dostignuća koja su uvelike utjecala na kasniji razvoj kartografije, pa do suvremenih kartografskih metoda. Posebno je izložena ideja da se u Varaždinu postavi spomen obilježje kojim bi se istaknula posljednja točka Bečkog meridijana. Luk toga meridijana koji je mjeren u 18. st. počinje blizu Brna, a završava u Varaždinskoj katedrali. Česi i Austrijanci obilježili su to važno geodetsko dostignuće spomenicima, a Hrvati još nisu. Studenti i nastavnici ALU zamoljeni su za pomoć u ostvarenju te ideje.

Nakon kratkog upoznavanja s topografskim kartama i katastarskim planovima na kojima je prikazan Plemenitaš, uslijedio je obilazak mjesta: posjet crkvi Sv. Antuna Opatca i detektiranje trigonometra na brdu Gorica pokraj Plemenitaša. Prilikom obilaska studenti su upoznati s pojmom trigonometra kao točkom na terenu postavljenom u postupku triangulacije koja je u ne tako davnoj prošlosti predstavljala osnovu svakog geodetskog mjerenja.

Koristeći se novim znanjima i alatima, studenti su razvijali umejtničke koncepte, izradili prezentacije

ideja i same radove. Radovi nastali na radionici predstavljeni su u Galeriji SC-a u Zagrebu od 16. do 23. prosinca 2019.

Jedan od izloženih radova pod naslovom 401.6 izradila je Ana Juršić.

### 401.6 2019.

inkjet print, šperploča, 105 × 105 cm

Na taj rad, uz predavanja, najviše je utjecala potraga za trigonometrom pod vodstvom prof. emer. Miljenka Lapainea. Drugog dana terenske nastave u Plemenitašu, studenti i profesori krenuli su u pravcu najvišeg obližnjeg brda, u potragu za trigonometrom. Trigonometar (grč. τρίγωνος; trokutni + -metar) je geodetska točka u trigonometrijskoj mreži koja ima određene koordinate u jedinstvenom koordinatnom sustavu i trajno je označena na terenu; naziva se i trigonometrijskom ili triangulacijskom točkom. Rabi se kao referentna točka za ostala mjerenja, a redovito se označuje (stabilizira) postavljanjem trajnih oznaka.

Stigavši na točku označenu na karti, krenuli smo u traženje, no potraga je bila bezuspješna. „Gdje je TRIGONOMETAR?“ Pitanje je koje je potaknulo inspiraciju za ovaj rad. O povijesti mjesta Plemenitaš nema mnogo podataka pa se tako potraga za trigonometrom proširila na potragu informacija o mjestu. Pronalaženje *genius loci* i *saeculi* bio je sljedeći korak. *Genius saeculi* (duh vremena) toga mjesta su ostavštine lovačke kuće Frankopana, česma koja je povezana s njom i kuća u kojoj su Frankopani mijenjali svoje konje, zatim kuća za svećenika i crkva Svetog Antuna



and detecting the trigonometric point on nearby Gorica Hill. During the tour, students were acquainted with the concept of trigonometric points as points on the terrain set up in a triangulation system, which until fairly recently formed the basis of all geodetic surveys.

Using their new knowledge and tools, the students developed artistic concepts and presented their ideas and works. The works they produced during the workshop were presented in the Student Centre Gallery in Zagreb between 16 and 23 December 2019.

One of these works, entitled *401.6*, was made by Ana Juršić.

**401.6**  
2019

Inkjet print, plywood, 105 × 105 cm

Along with the lectures, the work was most influenced by the hunt for a trigonometric point led by Prof. Emer. Miljenko Lapaine. On the second day

of field lessons in Plemenitaš, the students and teachers set off for the nearest hill in search of the trigonometric point. A trigonometric or triangulation point (from the Greek *τρίγωνο*; triangular + measure) is a geodetic point in a trigonometric network which has specific coordinates in a unique coordinate system and is marked permanently on the ground. It is used as a reference point for taking other measurements and it usually marked (stabilised) using permanent markings.

When the group arrived at the place marked on the map, they started to hunt for the point, but without success. “Where is the TRIGONOMETRIC POINT?” was question which inspired this work. There is not much information about the history of Plemenitaš, so the search was extended to find out more about the place. Finding the *genius loci* and *saeculi* was the next step. The *genius saeculi* (spirit of the age) is embodied

in the remains of the Frankopan hunting lodge, the well associated with it, and the house where the Frankopans changed horses. There are also the priest’s house and St. Anthony’s Church, the first buildings at the entry to the village. In 1857, it had 276 inhabitants, but in 2011, the number had shrunk to 38. The *genius loci* (spirit of the place) is the people, primarily the children who congregate around the well by the hunting lodge, the gathering point for village. There, the villagers have erected a bench and noticeboard, as most people gravitate towards the crossroads, so this was the logical place to put a discreet sign for the trigonometric point, symbolising the centre of the village. The symbol would enable digital searches for information about Plemenitaš. The title of Ana Juršić’s work is the number of the trigonometric point, although the point itself has not yet been found.

Miljenko Lapaine, Ana Juršić ■



kao prvo zdanje na ulasku u mjesto. Godine 1857. zabilježeno je 276 stanovnika, a 2011. taj se broj smanjio na 38. *Genius loci* (duh mjesta) čine ljudi, a ponajviše djeca koja se najčešće okupljaju oko česme pored lovačke kuće

Frankopana, na gravitacijskoj točki mjesta. Baš na toj točki mještani su postavili klupu i oglasnu ploču, jer najviše gravitiraju prema tom križanju, pa bi stoga to bila logična pozicija za postavljenje diskretne oznake za trigonometar

kao simbol središta mjesta. Simbol bi označio mogućnost digitalnog pregleda informacija o mjestu Plemenitašu. Naziv rada je broj trigonometra navedenog na početku teksta, trigonometra koji još nije nađen.

Miljenko Lapaine, Ana Juršić ■