The "Theseus Tempel" in Wien. Digital results one year after the CHNT 16 measurement seminar.

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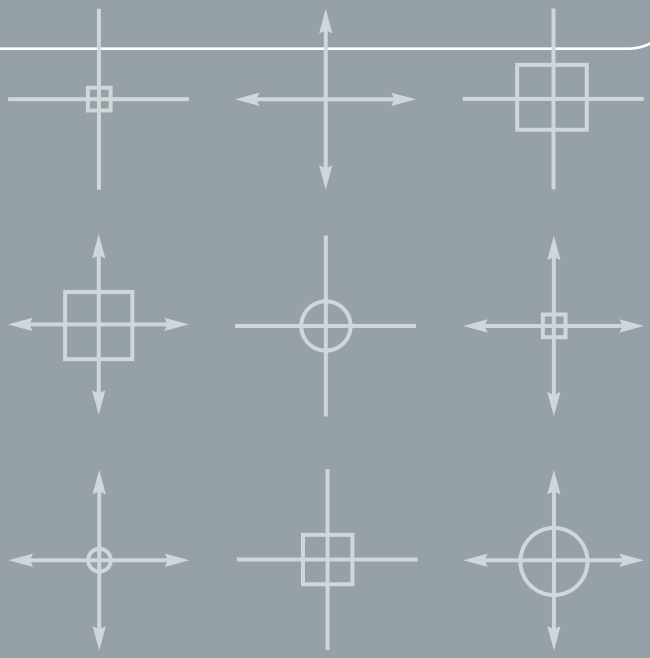
Proceedings



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The "Theseus Tempel" in Wien.

Digital results one year after the CHNT 16 measurement seminar.

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Abstract: The classic architecture and its image, strong in the imagery as in its real manifestation, it can be found in the shape of a rich sample in the Theseus Temple in the Volksgarten in Vienna. During the Cultural Heritage and New Technologies 16 workshop in November 2011 a well participated seminar took place in this location, under the guide of G. Verdiani, B. Ridderhof and W. Beex, and with the collaboration of R. Rudorfer, the whole monument was surveyed in all the over ground parts, the whole work was made together with the participants to the seminar and it allowed a good coverage of the whole building. During the past year, starting from the registered pointcloud it has been possible to reconstruct the digital surface model in a new, well defined, setup. Starting from the previous survey our work proceed in taking the photogrammetrical survey of the Canova's Theseus statue, reading the drawings from Pietro Nobile (the author of the temple) and analyzing, through the post-processing of these data, the Wiener neoclassic temple in its proportions and dimensions. After that the comparison between the "Theseus Tempel" and real classical model has found its result for produce some hypothesis about a new overall setup for the Theseus Temple because of exploring this monument from its state at now and a possibility of future evolutions. So our proposed themes are aimed to present the seminar work and how the data produced at that time has worked as the base for a new specific research about this interesting monument.

Keywords: Digital Survey, Data Working, Neoclassical Architecture, Pietro Nobile, Comparison

The digital survey and restitution of the "Theseus Tempel" in Wien (Fig. 1) was preceded by a session of historical research on the city, the political situation at the time, the earlier architectural project of the designer and the style of the final building compared to the original reference buildings existing in Greece. Just to go through all the steps of our work we wanted to combine a historical introduction to the more technical part of the survey and return data, as well as their development and final yield.

History of "Theseus Tempel" – From Greece whereby Italy to Austria

The "Theseus Tempel" was built between 1819 and 1822 based on the project of Peter von Nobile, an Italian architect from Canton Ticino in Switzerland. Franz I of Austria had the opportunity to meet Nobile in 1801, when the young architect visited Vienna for a trip. The emperor, known for his propensity for the arts, recognized the great potential and talent of Peter and offered him a scholarship to continue and complete his studies in Rome, until 1806. When he had finished Nobile received numerous commissions from the Empire, among which the most important, that the one of director of the Academy of Fine Arts in Vienna, joined the prayer from the emperor, to give him as soon as possible a large number of good architects. During his studies in Rome Nobile made the acquaintance of Antonio Canova: both of them struck a firm and lasting

friendship and a working relationship based on the admiration and mutual respect; which will be the first step for the building of the Temple.
During his stay in Vienna Peter von Nobile executed several projects for the city, all focused on the area of the *Ringstrasse*, starting in this way the next and complete restoration and modernization of that area.

In this historical frame was built the “Theseus Tempel” in the Volksgarten in Vienna, with the aim of making the backdrop to the sculptural group "Theseus and the Centaur" by Antonio Canova. The sculpture has large proportions (340x307 cm) and was realized under a commission by Napoleon himself, shortly after his coronation, and had to be designed to take place in "Via del Corso" in Milan. However, during the construction of this colossal work, which saw Canova engaged for about fifteen years (1804-1819), Napoleon was defeated and Franz I decided to buy it after he had a chance to see the statue in the studio of Canova in Rome and. The Emperor of Austria decided that the place for the beautiful marble group was a temple built on the model of the *Hephaisteion* at the *Agora* of Athens.

The contract for the construction of the temple was entrusted to Peter von Nobile, who at that time was the aulic counselor of the Emperor, but he was constantly accompanied and advised by Canova, who gave the right advices and the correct changes to make the new proposal compliant in front of the design of the original temple, so that the statue, originally designed for an open space, would not be sacrificed in a narrow or unfit space. The advice and recommendations of Antonio Canova can be found in the frequent correspondence between the two friends: both bound by a deep admiration of the classic, they made some changes to the temple in Vienna, compared to the Athenian original.
The main changes required by Antonio Canova was the open cell in the shape of a barrel vault, two square openings would have illuminated the marble group from the front and from the back, a size in width and height needed so looking at the building prospectus, the group should look like placed in a niche specially sized to contain it. This was also an idea of the sculptor, to place it on top of a rotating platform by means of a pivot pin: in this way, the group could be seen at 360 ° while illuminating it with only an opening. However, the weight of the statue and the possibility that due to a failure of the mechanism, it could have damaged, Canova deterred from claiming such a gimmick and led him to find the optimal solution for the lighting, the presence of an opening at the front and on the ceiling. From this one the light would be "rained" on top of the Theseus with a right angle, "so the group would be presented beautifully animated by light and dark and their delicate gradations", just as it appeared in the study of Canova. The two wrote and questioned for a long time to decide on other issues, such as the loss of the *pronaos* and of the *opistodomo*, the necessity of a door at the entrance of the cell rather than the two columns of the temple in the Athenian, changes the number of columns on the long side, and economic issues, not least the measurements and proportions of the temple. In particular, the change in the number of columns was seen willingly by Noble, which was very faithful to the principles Vitruvian architecture and then to 1:2 proportioning of the building layout. As regards economic issues related to such a construction, the disquisitions are focused rather on the ability to create below the Temple a basement to avoid the necessity of filling of soil around the floor or, where appropriate, of having to build foundations to go very deep to cover the area where flowing channels of the fortifications.

The survey and data processing of the “Theseus Tempel”

The survey campain

The survey of “Theseus Tempel” was derived from data collected in the measurement campaign carried out during the workshop "Surveying ‘TheseusTempel’, Volksgarten" at the CHNT 16th in November 2011 in Vienna.

The workshop was intended to demonstrate to the participants that the full understanding of the survey system is the best way to approach these operations, minimizing the possibility of errors and leaving space to fully trustable digital representation of the real.

The workshop participants were provided with different equipment ranging from the more traditional to the more high-tech devices; after the implementation of the first traditional measurement techniques the survey has been done with the laser-scanning, which produced the file used in this study to carry out plants and elevations of the building.

With the laser-scanning devices it is possible to acquire digital three-dimensional objects of different sizes in the form of a point cloud, a representation of the surveyed object made of points localize by their Cartesian coordinates and characterize by a color derived from the reflectance value of the material or from a mapped image.

Depending on the level of accuracy desired for the representation of the surveyed object, the resolution will be setup: high resolution allows a denser point cloud so capable to describe a high level of details. Each point that goes to make up the final cloud is defined by a Cartesian tern with the origin position set in the instrument; coordinates can then be immediately determined by knowing, as well as the exact distance of the point, the zenithal and azimuthal angles of the signal. In addition, for each point will be significant the value of reflectance that the device will measure: it is a dimensionless quantity given by the ratio between the intensity of the radiant flux reflected and the intensity of the radiant flux incident, in this way, each point will be to be colored otherwise and the reading of the results will be easier.

Point cloud data processing

All the scans were done using a Cam/2 Faro Focus phase shift laser scanner. This is a very good and affordable tool, with a high quality and a very easy to manage hardware. All the scans were taken and managed using the Cam/2 Faro Scene software. But after the data acquisition, it was preferred to continue the data treatment using the software Leica Geosystems Cyclone 6.0.3, through its operating modules, allows viewing of point clouds, their processing, modeling, and finally exporting to CAD software and modeling/rendering one.

The Leica software controls the data according to a browsable tree, with the root placed in the workstation that has the first branching one or more databases, each of which represents a set of point clouds (Fig. 2). All information pertaining to the database is stored in a single resident format file (.imp).

The model obtained consists of discrete points, so you cannot create a section with a plane.

The solution is offered by Cyclone tools that allow you to view points of the surroundings (deep as we decide) of a cutplane set. The points of this "slice" can be joined by a polyline that draws the section. Once drawn the polyline it can be exported in vectorial format (.dxf) and then processed with any CAD software.

Sections created by this procedure are not two-dimensional drawings because the polyline drawn rises even up to an amount equal to the thickness of the slice set in Cyclone, even if that minimum is present. To overcome this problem we used the command “flatten” in Autodesk AutoCAD, through which all points in the polyline were taken on a single level.
Using this procedure four fronts, eight sections and two plants were created, which were then developed and refined with Autodesk AutoCAD. During these passages between software sections do not change of scale and keep the measurements (in meters) originating in the point cloud.
To complete the elaborate two-dimensional it is necessary to integrate the boundaries of the cloud section with what each section can be seen in the prospectus. From the operational point of view make this shift is quite complex because Cyclone is not equipped with advanced tools for creating raster images. The fronts for each relevant section can be easily viewed in parallel projection by placing the point of view of the normal cutplane and hiding from view the portion of the point cloud which is located between the cutplane and the observer.
The section-front can then be saved as a raster image using the snapshot command, which creates a snapshot of what is displayed on the monitor at the time. This procedure is currently the only feasible but has limitations for high resolutions, so the coffered barrel vault, it was necessary to integrate the relevance of laser-scanner with a photographic survey, to delineate the different varieties of flowers present on drawers.
After the realization of the virtual drawings of the Temple (Fig. 3), the work has be carried on with the construction of a three-dimensional model very useful for advanced studies or any future simulations. Model has been edited using Nemetschek-Maxon Cinema 4D software, using low-poly 3D polygonal mesh and rendering it using the physical internal rendering engine of the software(Fig. 4). Materials and light conditions have been chosen after lots of observations *in situ, on* photos and more.
Moreover this work has been very important to study the proportion of the temple construction and to compare with other similar and in particular with the Theseustemple in Athens, original master of the Peter von Nobile one. As a result of this comparison, we concluded that the Austrian Temple has been constructed basing the main plot on the Golden Ratio, instead of the Classical Ratio (Fig. 5): the number of the columns, heights and width a proportion which is different from the original Greek design. The construction of the Temples in the classical age was based on an architectural module, formed by the larger diameter of a column. From this measure all the other elements were built with precise mathematical proportional relationships. The sight of a classical temple, thanks to its harmony, evokes in the observer a sense of marvel and symbolized in some way, the afterlife with which the human being there is rejoining. The geometric relationships that we have found in the Temple of Theseus in Athens have not been re-identified in Wien and this precisely because of the different purposes of the two temples: in Athens it will have the same characteristics as the first set out; instead in Vienna it has the sole purpose to be a treasure chest.

Inside the “Theseus Tempel”

The coffered barrel vault (Fig. 6)

After general composition consideration, we have shift our focus on the inside space. As a result of historical researches, we know that the Temple was originally constructed to hug the beautiful form of the Canovian

Statue of the "Theseus and the Centaur". But before the description of the marble group we want to conclude our work on CHNT 16 survey: the cell of the temple is covered by a coffered barrel vault (Fig. 7) with a central skylight, second and last another source of light after the entrance door. The amount and direction of light had been established by Antonio Canova himself: during the design of the temple he collaborated with Peter von Nobile, providing all the parameters for the best design the building that would serve as treasure chest to Theseus. In addition to the level and quality of lighting, the letters between Peter von Nobile and Canova also concern about whether or not to enter a door rather than the two columns at the entrance, so you have a surprise effect and to waive the *pronaos* and the *opistodomo*, which in this case would have made the temple much larger and therefore less suitable to the conformation of Volksgarten. From the letters is also clear that the measures of the temple of Vienna, as well as the number of columns, are precisely adapted to contain the size of the marble group and to adapt more to those who were the original proportions dictated by the mathematics and the classic form .

Constructing the 3d model of the marble group

From our work on the point cloud of “Theseus Tempel”, we wanted to deal with the experience to realize the three-dimensional model of the statue: "Theseus and the Centaur" (Fig. 8). Using the online freeware software Autodesk 123D Catch, which has allowed the development of a detailed photographic survey of the statue, we got a mesh 3d model and UV map associated with it (Fig. 9). Through the render process we got the final images.

123D Catch crossing the images can supply references and forms a point cloud with density, level of detail, allocated by the user. At this point, after the step of evaluation of the point cloud, software will pass the stage of processing of the mesh (The mesh is the entire surface that describes a 3D object. It is defined by polygons maximum quadrangular determined by lines and dots.) and after evaluation, it will work the definition of UV map, useful for texturing the model. At this point the user can export the model towards editing programs and rendering: in our case we used file format wavefront (.obj) with the relative material reference file (.mtl) to arrive on Nemetschek-Maxon Cinema 4D. In Maxon software we performed the cleaning of the model from the things around it (mostly the floor and the walls surrounding), the automatic application of UV map and finally rendering.

To obtain a good result with this kind of software it is necessary to shoot photos from regular point of views and from a 360° angle, to have the best result from different heights. However the position of the marble group and the light conditions were not in our favor, so the final model is perfectible.

Conclusions

The “Theseus Tempel” survey operation was conducted outside this work together with the operations of historical researches. Our work arose from the desire to give full meaning to the survey data collected for one of the workshops of CHNT 16 but not aimed at the restitution of this model. Moreover, in this way, it was possible to explore the potential of the different software used during the workflow, but especially and unexpectedly has been an incentive to use the new photogrammetric software and arrive at a similar result with different equipment both from the economic point of view that the time taken.

However we want to thank who kindly provided us with the technical stuff with which we were able to develop this work, the Vienna office of the Superintendent of Burghauptmannschaft and Friuli Venezia Giulia who collaborated actively providing us with all the material and explanations necessary for the success of work.

Pictures

Fig. 1 – Theseus Tempel – outside image – main front (Copyright: Angela Mancuso)

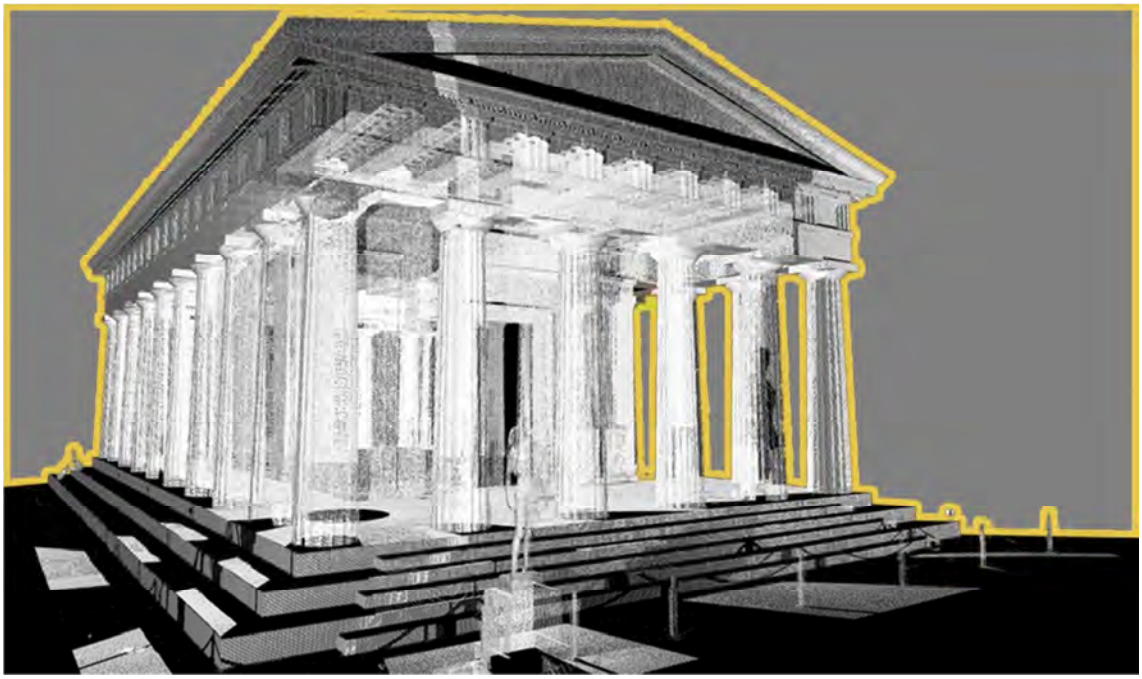

Fig. 2 – screenshot of TheseusTempel pointcloud – Leica Cyclon (Copyright: Giorgio Verdiani)

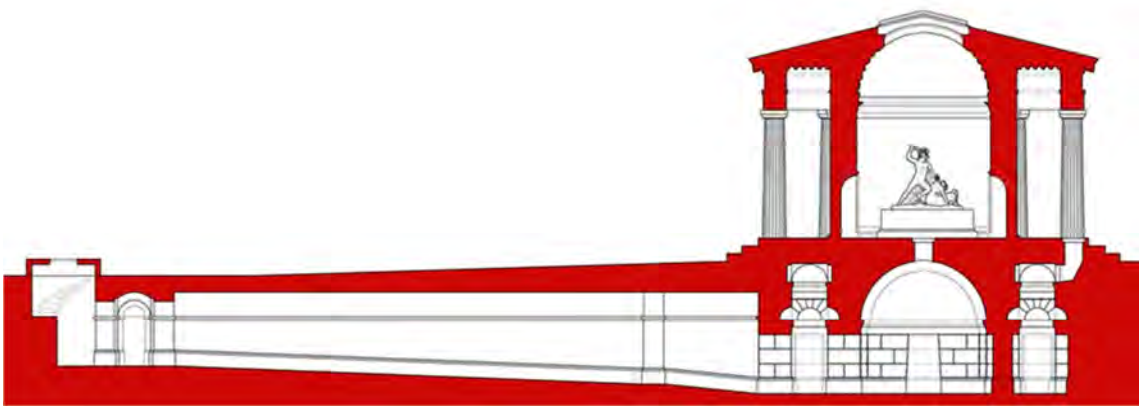

Fig. 3 – Theseus Tempel – section (Copyright: Angela Mancuso)

Fig. 4 – Theseus Tempel – 3d model (Copyright: Andrea Pasquali)

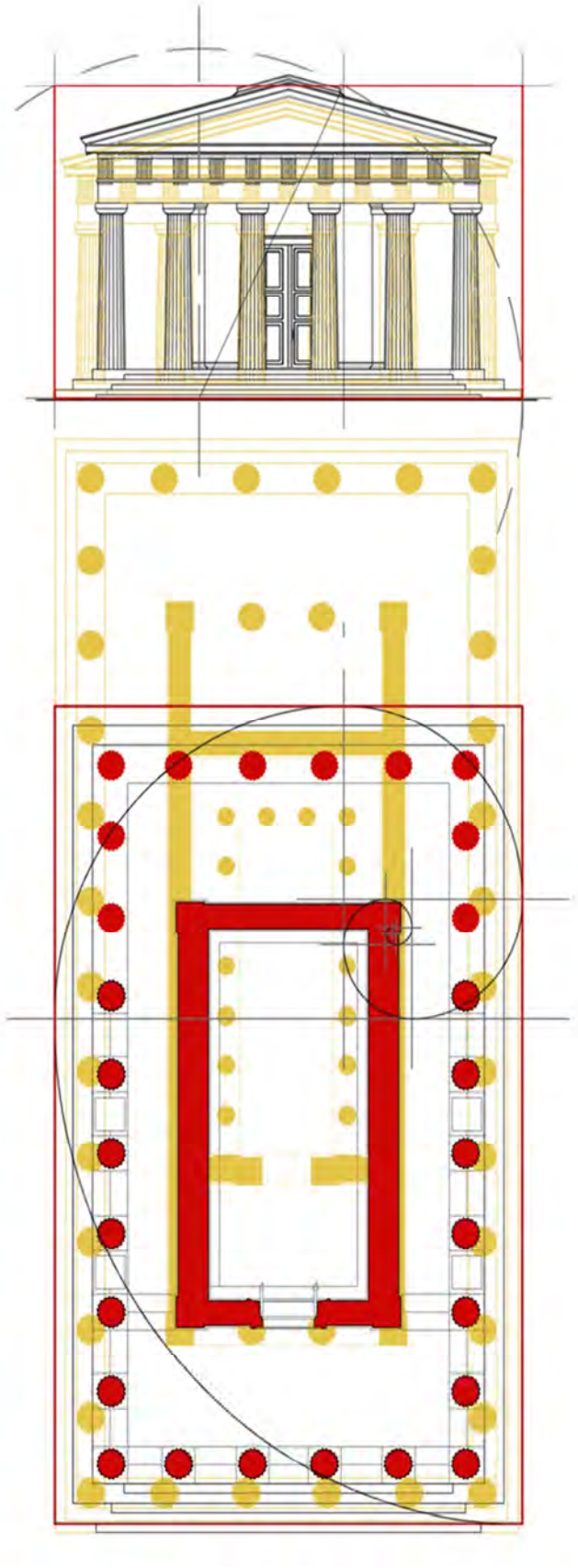

Fig. 5 – Comparison – classic and golden ratio proportion (Copyright: Angela Mancuso, Andrea Pasquali)

Fig. 6 – Theseus Tempel – inside image and vault (Copyright: Angela Mancuso)

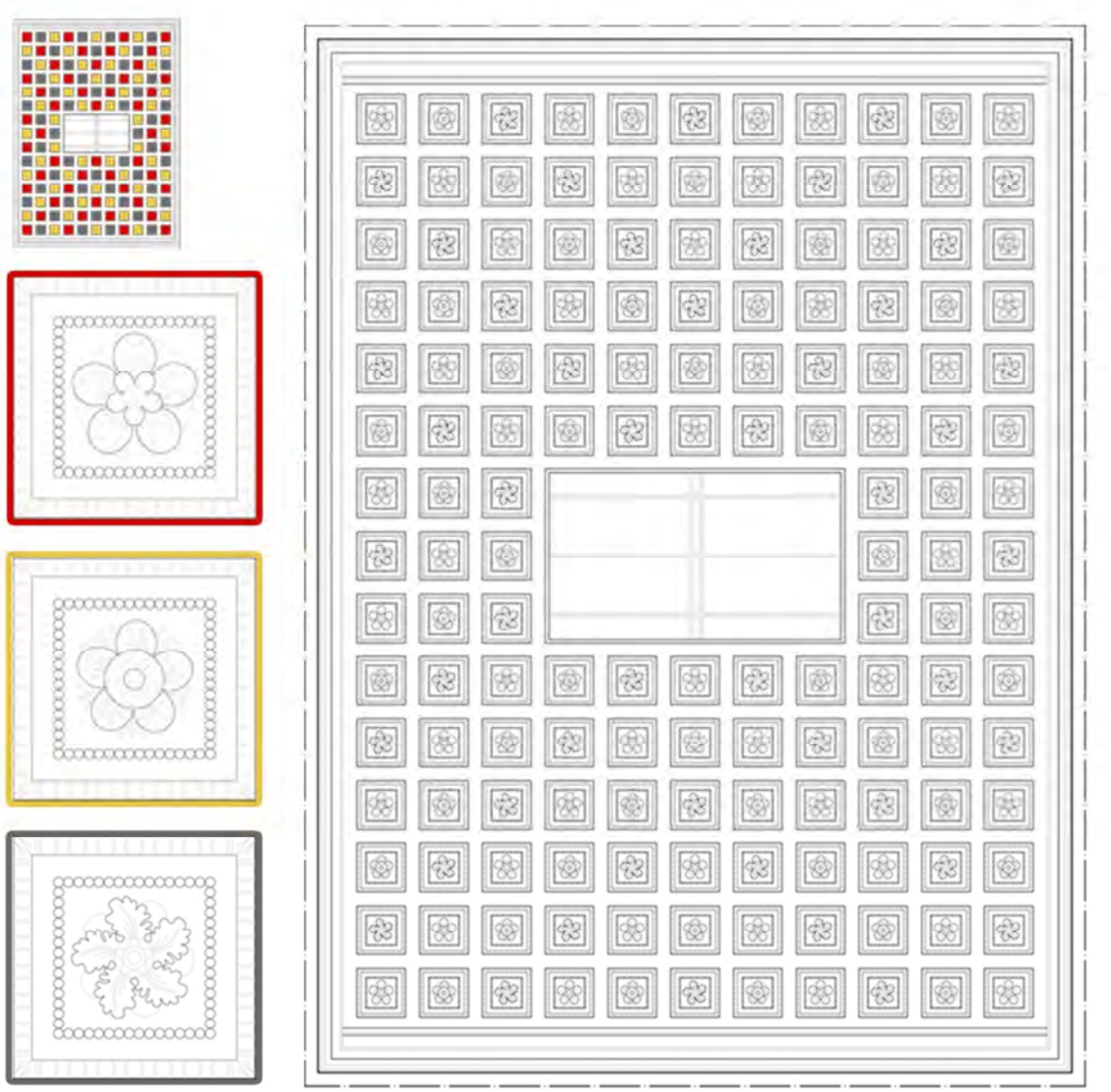

Fig. 7 – Vault of Theseus Tempel – full draw and particular (Copyright: Angela Mancuso)

Fig. 8 – Marble group of Theseus and the Centaur – full image (Copyright: Angela Mancuso)

Fig. 9 – Marble group of Theseus and the Centaur – processing data (Copyright: Angela Mancuso, Giorgio Verdiani, Andrea Pasquali)

References

KUNZ T., (2008), *Vienna - Architettura e Arte*; M.I. Verlag,

TOMAN R., (2008),*Vienna - Art and Architecture* (titolo originale *Wien Kunst und Architektur*); Tandem Verlag GmbH,

OPLL F.,(2004), Wien *im Bild Historischer Karten - Die Entwicklung der Stadt bis in die Mitte des 19. Jahrhunderts*; Böhlau,

BANIK-SCHWEITZER R., SARNITZ A.,(1998), *Architecture in Vienna*; Springer,

SARNITZ A., (2008), *Architecture in Vienna: 700 buildings*; Springer,

TOURING CLUB ITALIANO,(2010), *Vienna Salisburgo – La capitale degli Asburgo, La città di Mozart*; Touring Editore,

LE GUIDE MONDADORI, (2012), *Vienna*; Mondadori Electa,

SITTE C., (1980), *L'arte di costruire le città – L'urbanistica secondo i suoi fondamenti artistici*; Jaca Book,

KAHN R. A.,(1992), *A history of the Hasburg Empire, 1526-1918*; University of California Press,

CRICCO G., DI TEODORO F.,(2002), Itinerario *nell'arte - Volume I - Dalla Preistoria all'Età Gotica*; Zanichelli,

MARTIN R., (2007), *Architettura Greca*; Electa,

BOZZONI C., FRANCHETTI PARDO V., ORTOLANI G., VISCOGLIOSI A., (2006), *L'architettura del mondo antico*; Editori Laterza,

WATKIN D.,(2007), *Storia dell'architettura occidentale*; Zanichelli,

WATKIN D.,(1990), *Architettura Neoclassica Tedesca - Germania 1740-1840*; Electa,

FABIANI R.,(1997), *Pagine architettoniche – I disegni di Pietro Nobile dopo il restauro*; Campanotto Editore,

STRONDL R.,(2010), *Der Theseustempel: Dialog zwischen Antike und Gegenwartskunst - Perspektiven und visionäre Konzepte*; Master Thesis,

PEVSNER N., FLEMING J., HONOUR H. (1981), *Dizionario di architettura*, Einaudi,

BUCHINGER G., *Bericht zur sichtung der archivalien und der historischen ansichten des Theseustempel* (Given to us by Ing. H. Heninger del Burghauptmannschaft), not published,

RUSCONI L.,(1923) *Pietro Nobile e Antonio Canova*; in Archeografo Triestino, Serie III, Volume X, Tipografia del Lloyd triestino,

STREIBEL A.,(1991), *Arte e restaurazione: il neoclassico di Pietro Nobile fra Vienna e Trieste*; in Archeografo Triestino, Serie IV, Volume LI, Tipografia-Litografia Moderna,

PACORIG M.,(1992), Pietro *Nobile e la Massoneria a Trieste - Il controllo della polizia austriaca sui cittadini filo-francesi e sugli affiliati alla Massoneria*; in Archeografo Triestino, Serie IV, Volume LII,

PAVAN G.,(1992), *Pietro Nobile e l'insegnamento dell'architettura nell'Accademia di Vienna (1818-1849)*;Serie IV, Volume LII, Tipografia-Litografia Moderna,

POZZETTO M.,(1993), *Due documenti di Pietro Nobile*; in Archeografo Triestino - Raccolta di memorie notizie documenti particolarmente per servire alla storia della regione Giulia, Officine Grafiche della Editoriale libraria S.A.,

PAVAN G.,(2005), *Pietro Nobile Architetto: vita e opere*; in Archeografo Triestino, Serie IV, Volume LXV, Tipografia Graphart,

PAVAN G.,(2005) *Ricordo Triestino di Pietro Nobile*; in Archeografo Triestino, Serie IV, Volume LXV, Tipografia Graphart,

PAVAN G.,(2005), *La Burgtor di Nobile e di Cagnola a Vienna*; in Archeografo Triestino, Serie IV, Volume LXV, Tipografia Graphart,

SCHACHEL R.,(1978), *Pietro Nobile*; in *Dizionario Biografico austriaco 1815-1950*, Volume 7, Accademia Austriaca delle Scienze,

DOCCI M., MAESTRI D., (1994), *Manuale di rilevamento architettonico e urbano*; Laterza,

DOCCI M. (et al.), (2002), *Metodologie innovative integrate per il rilevamento dell'architettura e dell'ambiente*; Gangemi Editore,

VERDIANI G.,(2003), *Il Battistero di Pisa - rilievo e rappresentazione digitale tra ricerca e innovazione*; Università degli studi di Firenze,

VERDIANI G.,(2003), *Rilievo digitale e protocolli operativi*; Università degli studi di Firenze,

CORSARO G.,(2010), *Villa Adriana: il sistema dei criptoportici, una lettura tra architettura e archeologia*; Tesi di laurea, Università degli studi di Firenze.

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