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REVIEW

Of the doctoral dissertation prepared by M. Sc. Arch Magdalena WAŁEK
„Cultural Landscape of the jurassic belt of defensive architecture- a digital model of representation in the process of heritage conservation and popularisation"
under the guidance of Prof. dr hab. inż. arch. Magdalena Żmudzińska-Nowak and Prof. arch. Assunta Pelliccio
as a result of the double doctorate agreement between the Silesian University of Technology and the University of Cassino and Southern Lazio

1. Basis for the review

1.1. Commission of the Chairman of the Board of the Architecture and Urban Planning Discipline of the Silesian University of Technology, dr hab. inż. arch. Krzysztof Rostański, prof. of the SUT, for prepareation of the review of the doctoral dissertation elaborated by M. Sc. Arch. Magdalena Wałek: letter no. RD. AiU 512. 8. 2023 dated 23.11.2023 (received 04.12.2023)

1.2. Law on higher education and science of 20 July 2018, article 187 (Journal of Laws of 2023, item 742) as amended

1.3. Doctoral dissertation: Magdalena Wałek „Cultural Landscape of the jurassic belt *of defensive architecture- a digital model of representation in the process of heritage conservation and popularisation"* (bound double-sided computer printout in A4 format), Silesian University of Technology - University of Cassino and Southern Lazio, Gliwice, Cassino 2023 (received 04.12.2023)

2. Assessment of the formal part of the dissertation

Doctoral dissertation elaborated by M. Sc. Arch. Magdalena Wałek *„Cultural Landscape of the jurassic belt of defensive architecture- a digital model of representation in the process of heritage conservation and popularisation"* is a one-volume illustrated study in the form of a double-sided A4 computer printout with 480 numbered pages. The dissertation was prepared in English and submitted for assessment in the discipline of architecture and urban planning.

Nevertheless, in constructing her argument, the Doctoral Student refers to research and publications from other disciplines, such as history, art history, ethnology, geography and even geology, which deserves recognition.

The formal structure of the dissertation is typical of similar scientific studies. It is presented by the Author together with the methodology in the diagram (Fig.2, p.10). The main part of the dissertation (pp.1-339) consists of six substantive parts and four supplementary parts, numbered with Roman numerals, within which the Doctoral Student introduced further divisions, into chapters and subchapters numbered with Arabic numerals. The substantive parts of the dissertation should be considered successively: *I. Introduction* (pp.5-12); *II. State of Knowledge* (pp.13-50); *III. General Research* (pp.51-92); *IV. Detailed Research* (pp.93-234); *V. Proposal for Digital Representation of Structures in the Jurassic Belt* (pp.235-288); and *VI. Summary* (pp.289-296). Their necessary complements are, developed in an excellent manner: *VII. Bibliography* (pp.297-328); *VIII. Index of illustrations and their sources* (pp.329-336); *VIII. Index of tables and their sources* (p.337) and the legally required abstracts in Polish and English, marked as: *X. Abstract* (pp.338-339). A substantive supplement to the contents of the dissertation is part *XI. Annex* (pp.341-480). It includes: *Object Cards* (pp.341-472), *Technical Flight Specifications* (pp.473-476) and *Glossary* (pp.477-480).

The dissertation was structured in accordance with good practice in doctoral dissertations. The Candidate uses the scientific technique correctly and efficiently (use of footnotes, references to the literature on the subject and source materials - archival materials, conservation and planning documents, development strategies, etc.). However, in view of the vast amount of archival material and bibliographical sources, it happens that some items, cited in the footnotes, are not included in part *VII. Bibliography* (e.g. p.113, footnote 388, or p.116, footnote 395). The work is written in nice literary language and is a pleasure to read. However, the author also consciously and correctly uses numerous specialised terms and efficiently uses scientific terminology from several disciplines. The illustrative material present in the work - both archives, reproductions, author's photos and the author's " virtual representations" of the studied objects - is of excellent quality and deserves the highest praise.

The reviewer is convinced that these minor editorial imperfections and a relatively small number of linguistic errors and typos can be eliminated in the future during professional editing of the dissertation in the publishing house before possible (and, in the opinion of the reviewer, necessary - see further part of the review) preparation of the dissertation for printing, perhaps

in a bilingual version. I hereby state that formally, the dissertation of M.Sc. Arch. Magdalena Wałek more than meets the criteria for this type of scientific study.

3. Assessment of the substantive part of the dissertation

The evaluated doctoral dissertation of M.Sc. Arch. Magdalena Wałek entitled: "*Cultural Land-scape of the jurassic belt of defensive architecture- a digital model of representation in the process of heritage conservation and popularisation*" is a doctoral dissertation, which stands out among the recently published dissertations at Polish universities of architecture and is characterised by a very high scientific level. This is typical of postdoctoral theses and publications prepared by independent academics. Apart from the unquestionable merits of the Promoters, the work shows great passion, reliability and meticulousness on the part of the researcher, who is, after all, only just embarking on the path of a scientific career.

The problem of the dissertation, it would seem (even if only from the rich state of research presented on its pages in part *II State of Knowledge*), which has been exploited and present in Polish scientific discourse for over 150 years, became more up-to-date thanks to the work of the Candidate. Firstly, she brought together in one place a great deal of historical information and presented the state of existing research on all castles and watchtowers preserved to this day in the Krakow-Częstochowa Upland. Secondly, the doctoral thesis applies innovative research methods, which brings new values and broadens knowledge in the discipline of architecture and urban planning in Poland, which deserves distinction.

The Jurassic castles and watchtowers discussed in detail in part IV are presented against the background of similar European buildings and castles from other parts of Poland. The Candidate also presented historical and contemporary methods of conservation and presentation of this extremely valuable architectural and urban heritage (in part *III- General Research*). Particularly interesting in this part is the discussion started by the Doctoral Student concerning the preservation or reconstruction of castle ruins, which has been going on in European and world science since the second half of the 19th century and will probably never end. Gathering knowledge about the history, state of preservation and methods of restoration and accessibility of castles in the Jurassic belt is extremely important in view of the spatial chaos that has been growing there since the 1960s, first connected with the development of industry in the area, and after 1989 with uncontrolled suburbanisation and the commercialisation of tourist areas. This has resulted in a decline in the quality of the spatial context, including the viewing foregrounds of the castles (outside the protected areas, mainly nature conservation), which are located in this area mainly on hills.

Presentation of all the material, including references to earlier research, in one scientific study (and not a tourist guide) made it possible to systematise knowledge, at the same time extending it to include many previously unpublished archival materials (including valuable references to studies and conservation opinions stored in the archives of offices in the two voivodeships where Jura is situated). In part IV., on pp. 220-222, the Author mentions six castles which have not survived, which brings order to the current state of knowledge of the fortified landscape of the Jura and its transformations. An extremely valuable element of the dissertation, synthetically summarising the extremely reliable, detailed research on castles and watchtowers of the Jura is Table. 2. Valuation Summary (p.233). It is a pity that the names of the castles are not included, although the reviewer understands that some of them could appear at several points in the table, which would probably make it unnecessarily difficult to read Instead, in its present form, it is a valuable addition to the content of the book. Due to the international nature of the doctoral dissertation, the author also presented the historical, ethnological as well as geographical and geological background in which the nationally unique Jurassic castles were built and function, which is a very valuable addition to the basic argument established in the discipline of architecture and urban planning.

The innovative research methods applied by the Author, excellently discussed on the pages of the dissertation, both in Part *I- Introduction*, when presenting the methodology (chap. 5. Author's methodology - p.9-10), and also in Part *III. General Research* (ch.4. *Issues of castle ruin protection* - especially 'non-conservation' methods - pp.85-90), for both conservation and popularisation of heritage, are a relatively new element in research on monuments in Poland. Some of them were also discussed earlier in J. Sroczyńska's 2018 habilitation monograph entitled *'Interpretive presentation of architectural monuments in the protection of cultural heritage'*, which was not included in the dissertation, probably by oversight. Their implementation in the author's research work on Jurassic castles by M.Sc. Arch. Magdalena Wałek, was presented in Part V. *Proposal of Digital Representation of Structures of Jurassic Belt* (pp.235-288). This is, it would seem, the most innovative part of the book, although the reviewer does not wish here to depreciate in any way the enormity of the work on the previous parts of the dissertation and their great merit for Polish science.

In part V, the doctoral thesis not only presents the theoretical foundations and methods of creating digital models of historical buildings and spatial assumptions, but also, above all, shows the way of their practical application, on the example of selected Jurassic castles, for the protection and conservation of heritage, but also for the dissemination of knowledge about it and its contemporary, virtual exposition in the historical cultural and natural environment. Of

particular interest is the creation of HBIM (Heritage Building Information Model-ling) models, still innovative, but increasingly common in the West and South of Europe, still found sporadically in Poland. The result of the research is the creation of a digital platform, which the author calls "CastleHIM [Castle Information Model]" , which is intended to serve the digital documentation and exploration of the castles of the Krakow-Częstochowa Upland. It may be useful for scientific, conservation, educational, tourist and probably also land administration purposes, as well as helping in the preparation of various planning documents.

In the same, V. part of the dissertation, in chapter 2. *Methodology for data acquisition for the model* (pp. 241- 286), the Candidate presents in detail the methodology of data collection and model creation, illustrating it additionally with screenshots of successive stages of its creation. Together with the supplementary information provided in the Annex (concerning the equipment and software used and detailed data for drone flights over particular objects), this gives a correct picture of the research work and at the same time enables its repetition on the example of any objects and architectural-urban complexes in Poland and worldwide. In this way, it is not just a single author's experiment, but a meta-addition that can be extended with the development of technology and knowledge, but already at this stage brings new values to the scientific discipline of architecture and urban planning.

In the last VI. part of the dissertation, on the basis of the scientific argument presented in the dissertation and the described application experiments, the Doctoral Student answers the research questions posed at the beginning of the book, proves the thesis and demonstrates the realisation of the dissertation's objectives, which she additionally demonstrated many times in the earlier pages of the dissertation.

The reviewer highly evaluates the doctoral thesis elaborated by M.Sc. Arch. Magdalena Wałek entitled: "Cultural Landscape of the jurassic belt of defensive architecture- a digital model of re-presentation in the process of heritage conservation and popularisation" in terms of merit, as it stands out among doctoral theses in the discipline of architecture and urban planning in Poland.

4. **Remarks**

The reviewer's comments on the assessed dissertation are few, and are more of an ordering and editorial nature than polemical. The reviewer does not make any comments of a substantive nature that could affect the overall assessment of the dissertation.

- In view of the enormity of the accumulated literature, some of the items listed in the footnotes were not included in the bibliography - this error should be corrected with the publication of the doctoral dissertation in book form recommended by the reviewer (e.g. A. Bohm, J. Salma, W. Kosiński and others).

- When discussing tourist values of the fortified landscape (as e.g. on p. 106-107), one should refer not only to the research of the late Prof. J. Bogda-nowski, which is more than 40 years old, but also to the recent achievements of his students and continuators of his school of landscape architecture and architecture militaris: Prof. Zbigniew Myczkowski, Prof. Ja-dwiga Środulska-Wielgus or Dr. Krzysztof Wielgus.

- Missing from the pages of the examples of the castles in Pilica and Pilcza is a reference to the doctoral dissertation defended a decade ago by Jan Janczykowski, the former Małopolska Regional Conservator of Monuments, entitled: " The castle in Pilica against the background of Polish residential and defensive architecture of the first half of the 17th century" done under the supervision of the late Prof. Andrzej Białkiewicz.

- In Part V. there are no references to the publication by J. Sroczyńska, who for over 7 years has been introducing the issues of digital representation of architectural heritage into the Polish scientific discourse.

- Understandably, due to the already considerable volume of the volume (480 pages) and the time needed to carry out thorough research of all objects (and probably the costs of operating the equipment), only 19, out of more than 30 Jurassic castles, are included in the Appendix. This still provides a sufficient area of comparison for the purposes of the dissertation, especially as in the earlier parts of the work the author also refers to the other castles and watchtowers forming the so-called Eagles' Nests Route. But despite this, the question arises as to why the Doctoral Student did not decide to prepare a chart for Tenczyn Castle in Rudno (discussed on pp.191-194 and mentioned several times in the work), one of the most magnificent ruins in Jura after Ogrodzieniec?

5. Summary and conclusion

The reviewer is extremely impressed by the Candidate's scientific workshop, both the traditional workshop of the architectural historian and the innovative workshop of the contemporary conservator. The amount of data and archival material processed and reworked during the dissertation is enormous. As a result, the dissertation of M.Sc.Arch. Magdalena Wałek entitled: *"Cultural Landscape of the jurassic belt of defensive architecture- a digi-tal model of representation in the process of heritage conservation and popularisation"*, could even be considered finished and fulfilling all the criteria for doctoral dissertations after the end of part IV. Nonetheless, the application part of the research, discussed in detail in Part V, sheds completely new light and opens up new possibilities in the research conducted for over 150 years, as well as in the renovation, conservation and popularisation of the heritage of the castles of the Krakow-Częstochowa Upland.

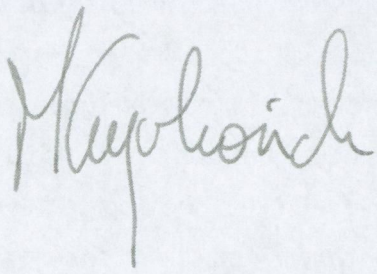
The research and application goals set out in Part *I. Introduction*, the research and application goals have been fully realised in the pages of the dissertation, the thesis has been proven and the research questions have been answered, both in the pages of the book, in the summaries of individual chapters and in Part *VI. Summary*.

In conclusion, the reviewer would like to emphasise that the doctoral student has mastered the scientific workshop in an excellent manner and has demonstrated general theoretical knowledge in the scientific discipline of architecture and urban planning. The topic of the thesis is up-to-date, and there are still not many studies and experiments related to modern methods of presentation and documentation of historical heritage, especially of Jurassic castles, in the Polish literature. The doctoral student has thus entered a research gap, broadening the scope of knowledge in the scientific discipline of architecture and urban planning. The reviewer is convinced of the high value and innovativeness of the research carried out by the doctoral student, and therefore, in the case of accepting the defence and awarding the doctoral degree, also asks for a distinction in the doctoral dissertation of M.Sc. Arch. Magdalena Wałek.

The reviewer hereby states that M.Sc.Arch. Magdalena Wałek in her doctoral dissertation entitled. "Cultural Landscape of the jurassic belt of defensive ar-chitecture- a digital model of representation in the process of heritage conservation and popularisation" substantive criteria and requirements resulting from Article 187 of the Law on Higher Education and Science of 20 July 2018, (Journal of Laws of 2023, item 742) with subsequent additions. Thus, she requests the Chairman of the Council of the Discipline

Architecture and Urban Planning at the Silesian University of Technology to continue the procedure, accept the dissertation and admit M. Sc.Arch. Magdalena Wałek to the public defence. If successful, the dissertation should also be commended, for the reasons stated above.

Prof. dr hab.inż.arch. Mateusz Gyurkovich



Kraków, 18.01.2024