

FY2021 Annual Report for International Joint Research with Research Fund
International Joint Digital Archiving Center for Japanese Art and Culture (ARC-iJAC),
Art Research Center, Ritsumeikan University

Date (year/mm/dd): 2022/04/04

1. Title of the Research Project	
Qait'bay Citadel (1477-1479): Visualizing the Main Coastal Fortification of Medieval Alexandria, Egypt	
2. Research Leader	
Name	Organization and title
Mohamed Soliman	National Research Institute of Astronomy and Geophysics (NRIAG)
3. Co-researcher (Total: 1 persons)	
Name	Organization and title
Mona Gamal Eldin Ibrahim	Dean of EECE, Egypt - Japan University of Science and Technology (E-JUST)
4. Overview of the Research Project (About 150 words) Note: If you have changed your project since the time of application submission, please write clearly where you made changes.	
<p>Qait'bay Citadel in Alexandria is considered one of the most important fortifications, not only in Egypt, but also along the Mediterranean Sea, which was built by the Mamluk Sultan Al-Ashraf Qait'bay in 1479 CE to protect the city against the Ottoman. The Citadel is situated at the entrance of the eastern harbor on the Pharos Island on the exact site of the famous Lighthouse of Alexandria. The Citadel consists of main rectangular fort with four circular corner towers, while double wall surrounds the court, the internal one includes weapons depots and barracks.</p> <p>In the age of digital humanities, available 3D imaging technology will be used to create Qait'bay Citadel VR and provide it to the public as a requirement in the time of social distancing for COVID-19. In addition, documenting this splendid medieval fortification given the fire disaster of Notre Dame Cathedral in Paris in April 2019.</p>	
5. Overview of the Research Results Note: We may use this section for the Center's PR.	
<p>Qait'bay Fort, as culture heritage site exposed to impact of climate change and anticipated risk, requires exceptional intervention methods. Consequently, this project is just a beginning to visualize Qait'bay Fort</p> <p>Nevertheless, Due to the limited fund, the proposed objectives in FY 2021 require more steps. So, basic steps carried out, in terms of disseminate the goals of the project and determine advantages of utilized tools that used for data acquisition and the appropriated software for processing.</p> <p>Now, the implementation to capture Qait'bay Citadel is clear enough to achieve the major goals of the project.</p>	

6. Research Activities

(1) Books

- “The Functional Urbanism of Souk Al-Silah, Cairo: The Political and Economic Impact on trade in a Medieval Urban Fabric”. Architecture and Urban Transformation of Historical Markets: Cases from the Middle East and North Africa. 2022. Neveen Hamza. Routledge. <https://www.routledge.com/Architecture-and-Urban-Transformation-of-Historical-Markets-Cases-from/Hamza/p/book/9780367697815>

(2) Articles

- “Simulation of a Discovered Mamluk Picnic Palace (1347 CE) in for Qal’at al-Kabsh”. International Journal of Town Planning and Management, Vol. 7, Issue 2, 2021, Pp. 10-20. DOI 10.37628/IJTPM
- “Sustainable Geodesign of the Urban Cultural Heritage of Alexandria, Egypt Vision 2030: Homogeneity of Authenticity and Modernization”, Journal of Disaster Mitigation for Historical Cities, Vol. 15, July 2021, Pp. 299-306. DOI <http://doi.org/10.34382/00015009>
- Story Map entitled: “Historical Urban Change of Alexandria (1801-2020 CE)” to “Esri User Conference 2021”, July 13, 2020. <https://www.esri.com/en-us/about/events/uc/esri-uc-map-gallery/#/>
- “Geographical Approach to Sustaining the Potential Cultural Heritage of Alexandria, Egypt, 2030: Visualization of the Latin Quarter for the Tourism Industry”, The Association of Japanese Geographers Spring Meeting 2021, J-STAGE, Vol. 310, March 29, 2021. DOI https://doi.org/10.14866/ajg.2021s.0_51
- “Construction of GIS Database of Alexandria Based on the Old Maps”, the Art Research Center (ARC) 21 vol., Japan, March 2021. (pp. 33-44) <https://www.arc.ritsumei.ac.jp/e/report/books/ar.html>
https://ritsumei.repo.nii.ac.jp/?action=repository_uri&item_id=14495

(3) Presentations

- **"Innovation of Water infrastructure and Desalination in Medieval Alexandria"**; 18th Jan., 2021(12:30-13:00 EET); Egypt-UK Newton-Musharafa Fund: Institutional Links - Call 4, (EECE) E-JUST, Alexandria.
- **"Advanced Technology Approach for Achieving Sustainable Development Goals for the Cultural Heritage of Egypt 2030"**; 22nd Jan., 2021(14:45-16:15 JST); Graduate School of Faculty of Letters, Arts, and Sciences, Middle Eastern and Islamic Course, Waseda University, Tokyo.
- **"Geographical approach to Sustaining the potential Cultural Heritage of Alexandria, Egypt, 2030: Visualization of the Latin Quarter for the Tourism Industry"**; 26th March, 2021(13:00-13:20 JST); the Academic Meeting of the AJG Spring 2021.
- **"Qait'bay Citadel (1477-1479): Visualizing the Main Coastal Fortification of Medieval Alexandria, Egypt"**; July 30-31; ARC DAYS 2021, Art Research Centre, Ritsumeikan University
- **"Generating metashape of Kyoto City Archaeological Museum collection 京都市考古資料館"**; Nov. 6, 2021 (16:50-17:10 JST); Digitization of Historical Cities in Egypt and Japan Workshop. ARC-IJAC, Ritsumeikan University.
- **"Visualization of Qait'bay Citadel Project: new horizon for Alexandria cultural heritage"**; Nov. 6, 2021 (17:40-18:00 JST); Digitization of Historical Cities in Egypt and Japan Workshop. ARC-IJAC, Ritsumeikan University.
- **"Historical LULC Change of Pre-modern Alexandria via the Napoleonic Map(1517-1801)"**; 19th Nov., 2021(15:00-17:00 JST); Graduate School of Faculty of Letters, Arts, and Sciences, Middle Eastern and Islamic Course, Waseda University, Tokyo.
- **"Synthesis of Geospatial Database and Interdisciplinary to Achieve NSDS for Downtown Alexandria, Egypt Vision 2030"**; Dec., 17, 2021. (14:45-15:00 CET); 30th International Cartographic Conference (ICC 2021). Florence.
- **"Synthetic Technics and Interdisciplinary Approach for Cultural Heritage in the Time of Natural and Man-Made Disaster"**; Jan., 27., 2022 (10:05-10:15 CET); Climate, Culture, Peace Conference. ICCROM, British Council.
- **"Qait'bay Citadel (1477-1479): Visualizing the Main Coastal Fortification of Medieval Alexandria, Egypt"**; Feb 26., 2022 (8:45-9:00 JST); ARC-IJAC Annual Meeting, Ritsumeikan University.
- **"Synthesizing Interdisciplinary Approach and Advanced Technique: A Resilient Intervention for a Vulnerable Cultural Heritage"**; March 19, 2022 (14:30-14:45 CLT); Egypt Japan Multidisciplinary Science Forum, Climate Change, Sustainable Development, and the Green Economy. Japan Society for the Promotion of Science (JSPS). Conference hall of NRIAG.
- **"Geodesign for Sustainable Planning" Seminar**; March 23, 2022 (10:00-13:00 CLT); E-JUST:
 - Session 1: “Geodesign Workflow for Building a Strategic Change Model (Cultural heritage urban mobility and environment)”.
 - Session 2: “Sustainable Geodesign for Downtown Alexandria to Achieve the SDGs, Egypt vision 2030”.

- **"Synthesizing Interdisciplinary Approach and Advanced Technique: A Resilient Intervention for a Vulnerable Cultural Heritage"**; March 27, 2022 (11:30-11:40 CLT); Webinar on Climate Change, Heritage and Museums in Egypt. UNESCO-Cairo Office.

(4) Symposiums and/or research meeting you organized

- Developing Alexandria Geodesign Project, subsequently four interactive workshops were hold:
 - “Sustainable Geodesign for the Urban Cultural Heritage of Alexandria, Egypt 2030: Homogeneity of Authenticity & Modernization”; July 2020; (32 participants); Ritsumeikan University in collaboration with Geodesign Hub.
 - “Sustainable Alternative Future for Kom al-Nadura Cultural Heritage site, Alexandria 2030”; October 2020; (5 participants); Ritsumeikan University in collaboration with Geodesign Hub, and MoTA.
 - “Sustainable Geodesign of Alexandria Downtown in the Framework of NSDS, Egypt vision 2030” March 2021; (16 participants); Ritsumeikan University in collaboration with Geodesign Hub, E-JUST, and NRIAG.
 - "Geodesign Development for ARC Alexandria to Achieve the SDGs, Egypt Vision 2030"; August 2021; (8 participants); Ritsumeikan University in collaboration with Geodesign Hub, and AACIA.
- "Geodesign for Sustainable Planning" Seminar; March 23, 2022; E-JUST; (12 participants); Ritsumeikan University, NRIAG & E-JUST.

(5) Other research activities (Lectures to the general public, and appearances in/contributions to mass media)

- Achievement; venue; and date.

(6) Academic awards

- Granting institution; name of award; title; and date awarded.

(7) Grants-in-Aid for Scientific Research -KAKENHI

- Research title; type of grants programs; starting year-ending year; and principal investigator or not.

(8) Competitive grants other than KAKENHI

- Research title; granting institution; grant name; starting year-ending year; and principal investigator or not.

(9) Other achievements