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Tim Marshall and Joan Roca (editors)

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Part 3:
City museum themes

The impact of digital formats on city museums: displaying, creating heritage and mobilising cities and citizens

Rosa Tamborrino

Recent changes in museums encompass the use of digital technology to display collections, create narratives and engage visitors. They also include ways of shaping new knowledge through innovative practices. Beyond preserving and exhibiting their collections, museums have become complex engines of culture that develop research, create new kinds of collections and promote social engagement and participation. The creation and implementation of digital formats involves deep transformation. Methods for sharing heritage are joined by societal challenges, such as democratisation and sustainability.

Novel formats can be especially disruptive in city museums, as narratives shape meanings across our living cities. While cities are embedded in the globalisation process, the methods with which city museums are using and focusing their collections concern the contemporary construction of the past and the diversity of urban identities. Questioning formats reveal how city museums are generating cultural strategies by managing their collections and shaping a response to societal and cultural developments.

The increase in audience and public engagement are key objectives to which digital approaches contribute for all kind of cultural institutions. However, curatorship, approaches, tools, and socio-cultural-economic impact account for specific challenges in the case of city museums. Strong relationships link these museums to their territory. Urban space and heritage as well as local developments and public wellbeing are crucial. Current museum formats range from integrating permanent collections and temporary exhibitions with virtual environments to online visitor engagement, from archives and digitally-created collections, to public events and webinars; from formats for training/educating/fun to formats for "recovering". The digital approach is a crosscutting perspective, embedded in the impact of museums on our digital society.

Making history in museums and creating heritage digitally
In recent decades, digital methods have increasingly infiltrated museum approaches and practices. At the most basic level, they are used to digitise heritage collections. Digital technologies have also given museums new ways of displaying and expanding, as well as creating new collections. They include public engagement formats and education programmes. In short, the digital approach

museums, turning digital fosters a novel approach to making urban history and identifying urban heritage.[3] Favourite digital formats seem to be narrative and story-based approaches,[4] which allow them to collect urban memories, enlarging and integrating their original collection with digital born collections (which have no storage issues and can be easily re-used). By integrating exhibitions with digital formats and encouraging people to contribute their own evidence and stories, city museums aim to offer a plural historical perspective.

Digital methods are already in use across parallel academic fields of humanities and social sciences and have fostered new approaches to urban history. In classrooms and museums, digital formats display virtual reconstructions and push dynamic visions of cities. They emphasise past events and changes as a component of urban history.[5] The introduction of digital media also fosters another format, enabling the explicit link with sources and the simultaneous coexisting of different interpretations of historical and material data. They enable non-linear narratives.[6]

Digital transformation initiates a change beyond the museum's mission as a storyteller. It involves a "shift in the positioning of audiences from cultural consumers to cultural producers."[7] This shift not only concerns how digital formats display data but also how they enable other narratives and interactive behaviours.[8] It is especially relevant in city museums because of the immediate link of urban stories with our current civic life. Beside exhibiting the past, these formats play a role in collective memory-making across conflicts and

Visitors interact with digital outfitting at Museum of London. Photo: Rosa Tamborrino[1]

is strongly changing museum practices in both exhibition and collection management. It is also affecting how objects coexist with data systems in databases, on websites and in museum galleries.

Digital formats have moved to city museums from other heritage fields (particularly archaeology) where they were first used to entertain visitors, improving the understanding of objects from ancient civilisations.[2] In city

1. Cf. Matthew Battles & Michael Maizels, "Collections And/of Data: Art History and the Art Museum in the DH Mode", in Matthew K. Gold & Lauren F. Klein (eds.) *Debates in the Digital Humanities* Minneapolis; London, University of Minnesota Press, 2016, p. 325-44. Accessed 8 February 2021. doi:10.5749/j.ctt1cn6thb.30.

2. Cf. Sebastian Hageneuer, Sophie C. Schmidt, "Introduction" in Sebastian Hageneuer (ed.) *Communicating the Past in the Digital Age: Proceedings of the International Conference on Digital Methods in Teaching and Learning in Archaeology (12-13 October 2018)*, London, Ubiquity Press, 2020. Accessed 8 February 2021. See also Adolfo Muñoz & Ana Martí, "New Storytelling for Archaeological Museums Based on Augmented Reality Glasses", p. 85-100.

3. Cf. R. Tamborrino, "The city on display: 'entering' urban history", Donatella Calabi (ed.) *Built city, designed city, virtual city. The museum of the city*, Rome, CROMA Università degli studi di Roma Tre, 2013, p. 35-55.

4. On the matter of digital storytelling see Joe Lambert, *Capturing Lives, Creating Community*, London, Routledge (2009) revised edition 2018. Together with Dana Atchley the author founded the Center of Digital Storytelling at Berkeley University and the digital storytelling movement, https://digitalstorytelling.coe.uh.edu/page.cfm?id=27&cid=27&sublinkid=31 Accessed 8 March 2021. See also some developments at Story Center website, https://www.storycenter.org/

5. Cf. Sven Dupré, Anna Harris, Julia Kursell, Patricia Lulof, & Maartje Stols-Witlox (eds.), *Reconstruction, Replication and Re-enactment in the Humanities and Social Sciences*, Amsterdam, Amsterdam University Press, 2020. Accessed 10 February 2021.

6. Hageneuer (ed.), *Communicating the Past...*

7. Rhiannon Bettivia & Elizabeth Stainforth, "The Dynamics of Scale in Digital Heritage Cultures" in Tuuli Lähdesmäki, Thomas Suzie & Zhu Yujie (eds.) *Politics of Scale: New Directions in Critical Heritage Studies*, New York, Oxford, Berghahn Books, 2019, p. 50-62. Accessed 8 February 2021.

8. Ian Gwilt, Patrick Mcentaggart, Melanie Levick-Parkin & Jonathan Wood, "Enhancing Museum Visits through the Creation of Data Visualisation to Support the Recording and Sharing of Experiences", in Simon Popple, Andrew Prescott & Daniel H. Mutibwa, *Communities, Archives and New Collaborative Practices* (eds.), Bristol, Bristol University Press, 2020, p. 123-38. Accessed 7 February 2021.

Digital terminal and workstation for visitors at Historische Museum Frankfurt.
Photo: Rosa Tamborrino

Video cabin for collecting collective memories at Historische Museum Frankfurt. Photo: Rosa Tamborrino

changes in cities and the lives of their people, affecting controversial memories and memory removal.[9]

Digital formats can be quite expensive for city museums, which rely heavily on municipal support. Are digital methods really changing the face of city museums? How do digital formats affect urban memory building? Do participatory processes, community, and "openness" really have an impact? These questions have taken our survey to European city museums and beyond. The survey has been conducted through a literature review, various visits just before the pandemic, and museum websites. This analysis also benefits from research and meetings during recent collaboration with city museums.[10] Some data and reflection are provided below.

The recent new exhibition at the refurbished Historische Museum Frankfurt provides an updated good practice example of a general reconsideration of museum narratives which encompasses traditional and digital formats.

The permanent exhibition in situ is chronological and thematic, and pays attention to issues that emphasise the highlights of urban history and some problematic crossroads. It should be noted that a limited number of museum pieces are

9. See the Red Location Museum of Nelson Mandela Bay Metropolitan Municipality devoted to apartheid in South Africa. Cf. Naomi Roux, "Memorial Constructions: The Red Location Cultural Precinct" in *Remaking the Urban: Heritage and Transformation in Nelson Mandela Bay*, Manchester, Manchester University Press, 2021, p. 33-83. See also Moniek Driesse, "Mapping traditions: a dynamic notion of urban heritage and the changing role of the city museum", *Traditional Dwellings and Settlements Review* 30, 1, 2018, p. 87 accessed 3/14/2021.

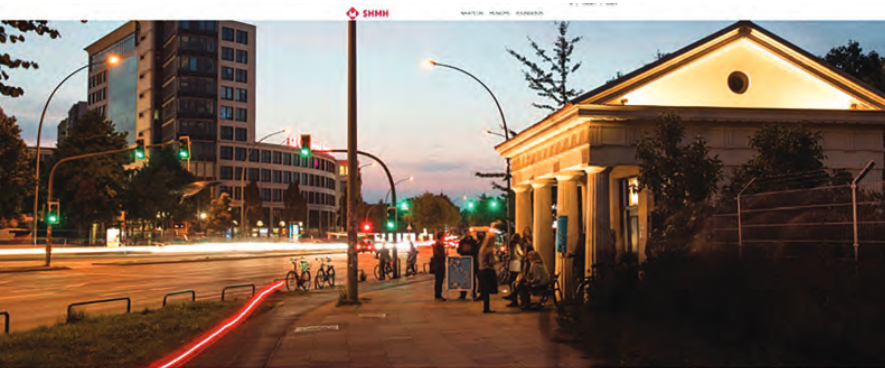10. Several meetings organised by the Museum of Barcelona of the intersectoral group History City Museum and Research Network of Europe, and debates conducted by its director, Juan Roca, offered a chance to reflect through a comparative perspective.

Millernton Guard House Museum of Oral History from the website of Stiftung Historische Museen Hamburg.
Accessed 01/04/2021 https://shmh.de/en/millerntor-guard-house

Detail of the book cover of *Lyon sur le divan*
(Gadagne Musées, Libel éditions, 2017) with an urban
image portraying Lyon produced at the occasion of
the campaign

displayed to create a dense narrative. In parallel with the collection, the museum has devoted extensive space (ca 600m² entitled *Frankfurt Now*) to new projects that create collaborative stories. New stories are clearly shown as ongoing curated projects of the *CityLab* format: they have specific focus and designated positions.

The *CityLab* in the museum is complemented by two other formats: a street-format (which triggered the others) taking curators outside the museums to meet people on the streets, and a *Digital CityLab* in the form of a digital platform where users can expand the collected and geolocated information. Invited users are expected to be the people of Frankfurt.[11] A department of expert staff is available for this purpose.[12]

Digital formats for crowdsourcing and/or participatory projects have been undertaken by several city museums in the last few years. Some museums foster online projects while others prefer to focus on real urban space, encouraging people to physically interact with the museum and the city. The Hamburg Museum represents a case of museums devoting a special urban site to engaging visitors in a project for the construction of a new oral history collection. Shown

in the presentation on the museum website, the neoclassical Millerntorwache, is a guard house which was once part of the city walls, and this site is a component of this city museum-visitor interaction.

Visiting "a piece" of living urban heritage establishes the first contact. Contributors can arrange appointments to deliver their private memories about urban past events that they have witnessed.[13] By moving from an historical reconstruction of the event to its perception ("How does it feel if you are caught up in a catastrophe in the middle of a cold night in February?"), these kinds of museum stories are also supporting a people-centred approach to disaster and social resilience. Moreover, people-centred projects encourage reflecting on changes of urban image perception. The campaign *Lyon sur le divan* in 2017 encouraged citizens to discuss with researchers of the National Agency of Urban

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11. This web page and the urban city map navigation contents are in German only. Cf. https://stadtlabor-digital.de/de/stadtlabor-digital?language=en accessed 8/3/2021. Historische Museum Frankfurt, Digital City lab.

12. I would like to thank the director, Jan Gerchow, for the visit and our discussion on the matter of the new setup, together with my colleague from Antwerpen University, Peter Stabel, in December 2019.

13. The project is located in the neoclassical Millerntorwache, a guard house which was once part of the city walls. It identifies this "cosy place" to invite citizens "to share their personal memories and to listen to others". https://shmh.de/en/millerntor-guard-house accessed 7/2/2021 Stiftung Historische Museen Hamburg, Millerntor Guard House.

Making History

A resource for students & community groups

Making History, is a unique set of resources that supports students, individuals and community groups to investigate and create a short digital history (up to 3 minutes). This site guides you through the process to research, produce and share a digital history about a person or event. Follow the modules below to research, create and share family and community stories.

The online format "Making History" developed by Victoria Museums as it appears at museum website, https://museumsvictoria.com.au/learning/making-history/1-introduction-to-digital-history/accessed 29/1/2021

Psychology (by sitting in a sofa in the middle of the city) and to draw their own portrait of the city. The following exhibition, organised by the Musée de Histoire de Lyon, added a "et pour vous?" asking visitors' points of views.

As a parallel path, *"Making history: research, create, share"*, created by Australia's Victoria Museum, is an online format made available through its website.[14] It enables users or a group of users to create their own family or community story based on a set of resources provided by the museum's digital archive.

Digital formats also question the figure of the format's curator. By engaging people, city museums are enabled (or would enable) non-linear format in order to create a plural urban perspective in today's multicultural multi-ethnic cities. Accordingly, the curator becomes a cultural mediator. *Cleveland Historical* is a format developed by the Center for Public History and Digital Humanities that suggests a new kind of curation.[15] It provides a transformative way of understanding "the place" in cities.[16] In this collaborative oral history project, the community actively participates in reworking understandings of places and community identity.

The German museums mentioned above foster gradual engagement to increase awareness in citizens as witnesses and experts of their city, contributing to the museum collection. The Cleveland perspective focuses more on people as users of urban space. The Victoria Museum's approach combines collecting and displaying with educational activities. It bases its online potential on oral history videos and classrooms.

The formats target people/users of all provenance, age and genders. Their engagement with events contemporary to their lives as well as the focus on subjectiveness aim to build a new narrative of urban heritage. This approach overcomes urban identity as a notion based only on the specificity of city history and traditions, taking into account the sense of belonging and cultural identity[17] provided by collective memories that shape current urban identities, both in practices and players with different backgrounds.

Not only do these new formats impact the urban heritage on display by incorporating different storytelling, they also influence novel teaching/learning approaches. Open-ended narrative and egalitarian dialectic have an enormous impact on education formats. Some parallel aspects have been identified both in museum practices and in digital humanities scholarships.

On one hand, authors have identified a kind of *performative format*. The activation of digitally enabled doing has been described as a form of "enactment" (Parry 2019; Dupré 2020). This term, pertinent to theatre and music, frequently recurs in digital humanities relating to the "senses of action" of its approach.[18] The same recurrence and meaning characterises forms of education and public engagement that bring "bodily knowledge and sensory skills" to classrooms and museums.[19]

On the other hand, city museum practices and digital humanities methodologies share data-driven rebuilding processes that require technological

14. Cf. "Making History", the online format developed by Victoria Museums https://museumsvictoria.com.au/learning/making-history/1-introduction-to-digital-history/ accessed 29/1/2021. Victoria Museums introduction to digital history. It includes Melbourne Museum and other museums, such as Bunjilaka Aboriginal Cultural Centre. The online format allows the use of a set of resources, supporting students, individuals and community groups with investigating and creating a short digital history. https://museumsvictoria.com.au/learning/making-history/.

15. Cleveland Historical website Cf. https://clevelandhistorical.org/ accessed 4/1/2021.

16. Mark Tebeau, "Listening to the City: Oral History and Place in the Digital Era", *The Oral History Review*, 40, 1, 2013, p. 25-35. http://www.jstor.org/stable/43863453 accessed 8/2/2021.

17. The recommendations of international organisations such as UNESCO and ICOMOS underline the need to include plural identities and intercultural dialogue by fostering the notion of "belonging" rather than identity. Examples include the integration of the concept of "cultural significance" in the Burra Charter (ICOMOS, 1979, Burra Charter. https://australia.icomos.org/wp-content/uploads/Burra-Charter_1979.pdf). Cf. UNESCO (2015), Recommendation Concerning the Protection and Promotion of Museums and Collections, Their Diversity and Their Role in Society. Available online http://www.unesco.org/new/en/culture/themes/museums/recommendation-on-the-protection-and-promotion-of-museums-and-collections/.

18. See Kyle Parry, "Reading for Enactment: A Performative Approach to Digital Scholarship and Data Visualization" in Gold & Klein *Debates in the Digital Humanities...*, p. 141-60. See also Elisa Mandelli, *The Museum as a Cinematic Space: The Display of Moving Images in Exhibitions*, Edinburgh, Edinburgh University Press, 2019. http://www.jstor.org/stable/10.3366/j.ctvnjbh8k accessed 2/7/2021.

19. Cf. Dupré, Harris, Kursell, Lulof & Stols-Witlox (eds.), *Reconstruction, Replication and Re-enactment...*

Visitors at the digital terminal of the Museum of Liverpool. Photo: Rosa Tamborrino

supports. The Museum of Liverpool, for instance, offers a multimedia approach to listening for music groups, immersive panorama projection to experience a football game, and a designated place where visitors become users of a digital platform to explore in situ geolocated contents and search for place-related contents in the museum database.

The content in question appears "computationally domesticated to the database".[20] Moreover these emerging models also implicate new methods for assessing the social impact and public mission of museum.[21]

The pandemic formats: the portrait of time
Since the 1990s and the launch of the first museum websites, museums have developed new channels to engage their public.[22] Museums publish data on the Internet

and in closed networks (intranets) for their visitors. However, most museums have not fully benefited from this tool as a new kind of cultural online offer until now.

In many cases, city museum websites are just a component of municipal websites. The Museo de Historia de Madrid provides an interesting example.[23] There are two web developments. The double path appears as a way to underline a choice by creating certain specifications. The city's official tourism website provides some information on the city museum in Spanish and English.[24] The municipal website integrates the museum's online offer into urban life. Monthly museum curators introduce "a piece", linking it to the related urban heritage site and pertinent documentation. The Musée de Histoire de Lyon does something similar. A new city museum website was recently launched, offering details of programmes, projects and curators involved in the remaking of the museum as well as webinars.[25]

In other cases, online formats interact with onsite museum formats. Following the digitisation of the Amsterdam Museum's entire collection, the museum decided to make everything accessible online. This gives people an insight into the complete collections of both the Amsterdam Museum and Museum Willet-Holthuysen, and the museum is free to be more selective in the presentation of its collection in the permanent exhibition (90% of the pieces are not on display in the museum but clearly visible online).[26] The museum asks researchers and members of the public for contributions. Online visitors are asked for their "assistance" item by item, with comments and suggestions. There are some difficulties in the transition between the objects and their immaterial representation, involving the distinction between real and digital formats (museum collection and digital libraries). Linguistically too, the call mentions "piece" while it actually means data.

In general, even if they have their own website, city museums usually see it as a tool for reaching the public instead of a format. Social media also had been mostly used to spread information rather than analyse it. The development of a real platform to meet people and deal with the museum mission in a new

20. Battles & Maizels, "Collections And/of Data...", p. 334.

21. Cf. Enrico Bertacchini & Federico Morando, "The Future of Museums in the Digital Age: New Models for Access to and Use of Digital Collections", *International Journal of Arts Management* 15, 2, 2013, p. 60-72. Accessed 7, 2, 2021. http://www.jstor.org/stable/24587113.

22. Cf. Caitlin Chien Clerkin & L. Taylor Bradley, "Online Encounters with Museum Antiquities", *American Journal of Archaeology* 125, 1, 2021, p. 165-75.

23. Cf. https://www.madrid.es/portales/munimadrid/es/Inicio/Cultura-ocio-y-deporte/Cultura-y-ocio/Museo-de-Historia-de-Madrid?vgnextfmt=default&vgnextoid=ab18a1ead63ab010VgnVCM100000d90ca8c0RCRD&vgnextchannel=c937f073808fe410VgnVCM2000000c205a0aRCRD. Accessed 6, 2, 2021 Madrid municipality web site Museo de Historia de Madrid.

24. Cf. Madrid official tourism website https://www.esmadrid.com/en/tourist-information/museo-de-historia.

25. Cf. https://www.gadagne-lyon.fr/ Accessed 6, 2, 2021 Musée de Lyon-Gadagne Cf, also https://www.lyon-france.com/Je-decouvre-Lyon/culture-et-musees/musees/musee-d-histoire-de-lyon-musees-gadagne only Lyon Musée d'Histoire de Lyon-Musées Gadagne.

26. Cf. Amsterdam Museum official website, https://www.amsterdammuseum.nl/en/collection/online-collection accessed 26, 1, 2021 Amsterdam Museum Online Collection.

digital environment requires expertise and investments, and online tools have been used poorly due to their novel disruptive potential.
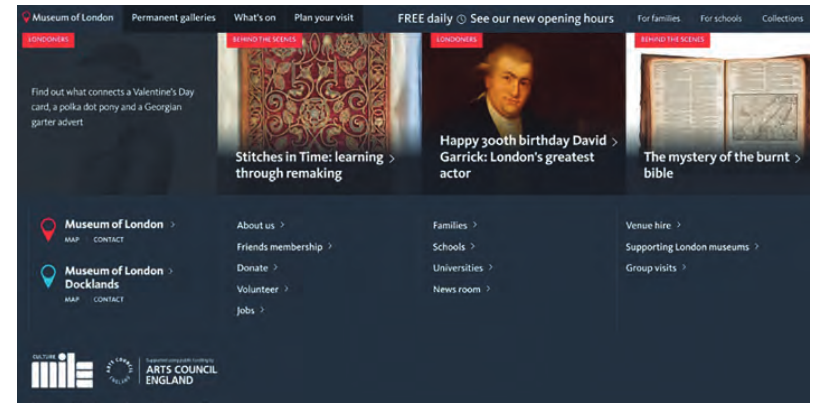
However, while online educational formats were seen by authors as still needing to be explored and the museums' learning-centred approach still had to be transferred to the web,[27] the COVID-19 pandemic suddenly encouraged new online curation formats. City museums using digital technologies have made huge progress in making their collections and narratives digitally accessible over the last year. Two kinds of format are currently in use: synchronous technologies such as live webinars and online digital archives, along with collaborative environments where you can interact and create a sense of community. The first makes resources available to visitors for their entertainment, while interactive formats aim to go beyond the notion of "visitors" and actively engage people in creating.

In March 2020, in Italy, with the first lockdown in the world a new need for an online cultural offering arose. While cultural institutions were closing, some of them felt the need to offer a "comfort format" to encourage people to stay at home with virtual public entertainment. Despite a lack of digitisation of Italian museums, they set to work creating formats to "re-open online" in response to the dramatic situation. I call this response a *new pandemic format* which provided evidence of cultural and social resilience.

The ongoing Italian project MNEMONIC — by Politecnico di Torino in partnership with Fondazione Polo del 900 — will provide a digital platform to collect "the memory of the present" and offer Italian museums productions and collectively changed uses of urban and marginal spaces in locked-down Italy.[28] Unlike elsewhere in Europe, Italy's urban heritage is spread among a myriad of museums. The online platform will allow the networking of the current digital and real-world transformations of urban heritage practices by mapping formats (tools, interactions, stakeholders) in Italian cities and cultural institutions as a form of urban resilience. The final *MNEMONIC Atlas* aims to know more about new ways "to make and provide" heritage, culture, entertainment, education at the time of the pandemic era.

Museum of London website, some online digital formats at https://www.museumoflondon.org.uk/discover/emma-hamiltons-copy-haydns-creation accessed 01/04/2021

The spread of the pandemic around the world has generated the offer of special online formats everywhere. Several city museums are "open online with loads of content to keep you entertained".[29] The Museum of London website offers several online exhibitions on various aspects of urban history, such as fashion, the Roman period, black history, Londoners, Hidden London; the *Behind the scenes* is a container-format that also offers access to a series of online exhibitions.

My London format groups together items from the museum collections linkig them to urban boroughs.

The offer is continuously updated and formats are reorganised. Since January 2021, the museum has also been acquiring "viral tweets for collecting COVID-19".[30] Users of the Wien Museum website can visit the online *"History and City Life Collection"* searching through 53,195 "items reflecting the cultural, political, social, economic and day-to-day history of Vienna from 1500 to the present day". Alternatively, they can access visual stories in the form of digital *Albums*. These digital formats are among the most articulate and eclectic online materials offered by city museums, with thirty Albums on Vienna, the Viennese, and art from

27. William B. CROW & Herminia DIN, "The Educational and Economic Value of Online Learning for Museums". *The Journal of Museum Education* 35, 2, 2010, p. 161-72 (p. 162). http://www.jstor.org/stable/25801345 accessed 2/9/ 2021.

28. MNEOMONC is a research project (coordinated by the author of this paper) by the Department of Urban and Regional Studies and Planning in partnership with Fondazione Polo del 900. The foundation is a museum and cultural center in Turin clustering 22 Turin cultural institutions. MNEMONIC website http://www.mnemonic.polito.it/. The project was launched in July 2020 and is supported by Politecnico di Torino. It follows the initial observation of changes in the use of private, collective and public spaces since the beginnings of lockdown in Italy. Cf. R. TAMBORRINO, "Coronavirus: locked-down Italy's changing urban space", *The Conversation*, 20 March 2020, https://theconversation.com/coronavirus-locked-down-italys-changing-urban-space-133827. accessed 2/11/2021.

29. Cf. Museum of London website, https://www.museumoflondon.org.uk/museum-london accessed 2/11/2021 Museum of London.

30. The format is a part of the project *Going Viral*. https://www.museumoflondon.org.uk/news-room/press-releases/museum-london-acquires-tweets accessed 3/13/2021 Museum of London acquires "viral" tweets for collecting COVID-19, 28 January 2021.
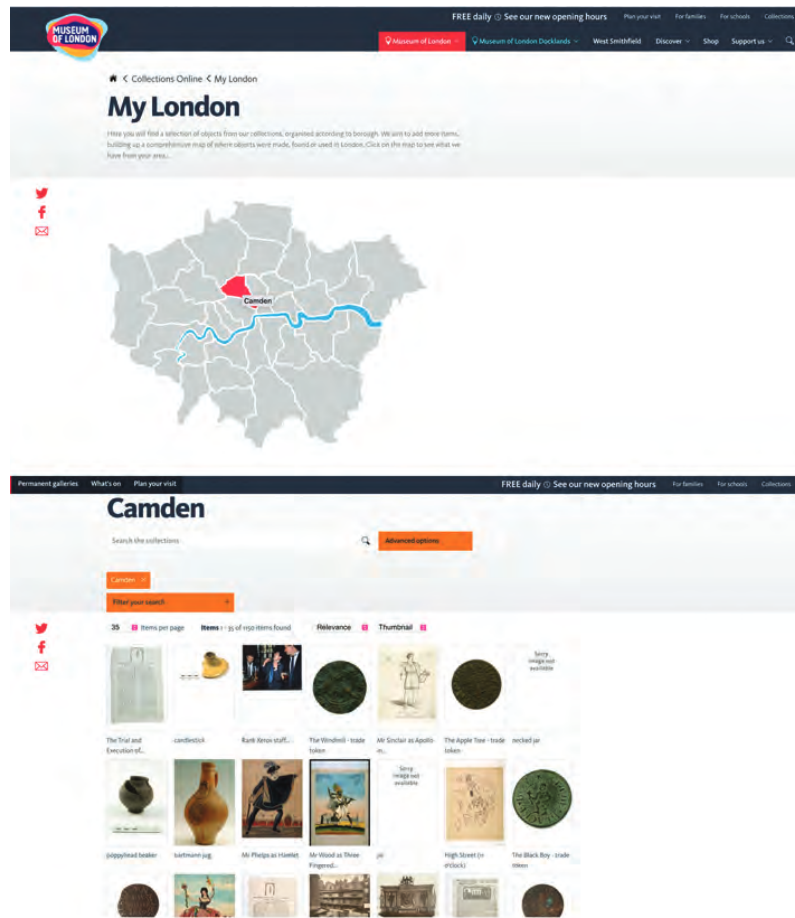
Camden collection in My London format at the Museum of London website https://collections.museumoflondon.org.uk/online/boroughs/accessed 01/04/2021

different periods, displayed in random order.[31] The Helsinki Museum website lets you browse the collection of photographs, art and objects. It also offers *Finna* as a special collaborative project to survey Finland's streets. The Marseille Museum offers a virtual visit of the city through a 3D interactive map and a chance to discover its history through a timeline.[32] *When Corona goes to the museum* is the concept around which Ljubljana Museum has created its new special pandemic format. The *Corona Project* is a call for the local community to describe how the pandemic has changed "our households, workplaces and leisure activities".[33]

Other developments are shown by the Luxembourg Museum website as a consequence of a constantly changing situation that requires short-term adaptation. As the exhibition *Fouillez les archives/Browse through the city archive* cannot be visited because of COVID-19 restrictions, a short video behind the scenes of the exhibition is available. The interactive format, *Discover the exhibition in 3D*, enables a visit to the real exhibition in a virtual environment. The Virtual Reality method is also available with the use of Oculus and intense interaction with the tool is encouraged, offering the chance to zoom in and out on objects and captions.[34]

Conclusions

If the history of the city is on display in the museum, the living city seems to be more and more the real subject of museum formats nowadays. Introducing the book *Museums Inside Out*, its editor asks "Where does the museum end and the outside world begin?"[35]

Formats capable of creating direct interactions between museum heritage and urban heritage in urban space (the city which hosts the museum) are provided by Apps. By downloading the Marseille museum website app, some *Historical Journeys of Marseille* are enabled to experience open-air urban heritage.[36]

31. Thirty individual short *Albums* in digital format are listed in random order (enabled by the chronology of their creation). However, some themes can be recognised: some *Albums* focus on objects (shields, watches, money, death masks, shadow plays, fans), others are monographic portraits of artists (painters, musicians, engravers, artistic directors, graphic artists, photographers), others socio-architectural (such as cafés, cards, 18th-century Viennese buildings and urban space), socio-political (barricades, production by female artists, avant-garde). Wien Museum website. https://www.wienmuseum.at/en/collections/history-and-city-life. accessed 3/3/2021.

32. Cf. https://www.musee-histoire-marseille-voie-historique.fr/fr accessed 2/3/2021 Musée de histoire de Marseille.

33. https://mgml.si/en/city-museum/exhibitions/518/corona-project/ accessed 2/3/2021 Lubjana Museum.

34. https://my.matterport.com/show/?m=zYcioJ8QBt6 accessed 3/2/2021 Lëtzebuerg City Museum.

35. Mark W. Rectanus, "Introduction: MOVING OUT" in *Museums Inside Out: Artist Collaborations and New Exhibition Ecologies*, Minneapolis; London, University of Minnesota Press, 2020, p. 1-26.

36. Thanks to augmented reality, the format allows users to visit the city "walking" in its history. Cf. https://www.musee-histoire-marseille-voie-historique.fr/visit/tools accessed 3/8/2021 Musée de Marseille.

However, beyond enacting a digital experience, digital transformation entails digital curatorial practices for "(re)negotiating identities, cultural revitalisation and economic development".[37] Among the different scales of heritage-making in recent years,[38] increasing awareness of urban heritage is related to its impact on local communities.

    The digital world is an opportunity for democratisation and a challenge for designing new city museum developments. A critical approach to tools and formats as well as the integration of these formats in cultural and scientific standards are essential. A number of new formats have been rapidly produced under the pressure of current needs. Our analysis reveals uncertainty. Dating for digital products is always dubious, as is their curation. These oversights, together with ephemerality, are critical aspects of digital formats. There is also sometimes a lack of context (both physical and cultural). Some formats provide visual sequences (image galleries) to narrate the past, instead of providing historical interpretative narrative as a museum is expected to. The most interesting formats seems to be those created specifically for a digital environment. Once shaped, they are presented as containers of various exhibitions and activities. Being tools, they perform different functions to those of an exhibition in real life. User-friendly interfaces can enable more than a basic search in a database. The digital approach has to empower human vision, enhancing not only the use of a collection but the power of heritage itself. Networking museum digital formats could be an interesting perspective for questioning urban heritage.

    In a publication on digital museum practice by the Frankfurt City Museum, the curator and senior advisor of digital museum practice, Marete Sanderhoff, has indicated the museum's "idea of Public Domain" as "the sum of human intellectual and creative efforts" to be used by everyone "how they please". Accordingly, the museum shares reproductions of works in the Public Domain free of restrictions. This clearly indicates that formats involve complex and relevant issues. In a digital society, curating is, more than ever before, a crucial aspect of cultural policies. Formats can position city museums as catalyzers of local and socio-cultural development or leave them at the mercy of change. The governance of formats capable of maintaining the museum's independent cultural and critical role is challenging. They need to be continuously explored and discussed.

37. Gregory Ashworth, "Interview" in Bryony Onciul, Michelle L. Stefano & Stephanie Hawke, *Engaging Heritage, Engaging Communities* (eds.), Woodbridge, Suffolk, UK; Rochester, NY, USA, Boydell & Brewer, 2017, p. 51-54.

38. Cf. Tuuli Lähdesmäki, Suzie Thomas & Yujie Zhu (eds.) *Politics of Scale...*

Author biographies

Vivi Lena Andersen
Head of Exhibitions and Public Outreach, Museum of Copenhagen. Recent projects: Curator
and project manager of the new Museum of Copenhagen, author of *København og historien*,
vol. 3, *Kampen om Byen 1200-1550*, Principal Investigator of the network project *Poverty and
Plenty in the North. Later historical archaeologies of material excess and scarcity in Scandinavia
and the North Atlantic* 2022-2023.

Glyn Davies
Head of the Curatorial Team at the Museum of London, a post he has held since 2017. Previ-
ously, Glyn spent many years at the Victoria & Albert Museum, where he was Lead Medieval
Curator for the Medieval & Renaissance Galleries Project.

Jan Gerchow
Director of the Historisches Museum Frankfurt (Germany) since 2005, after working as a cu-
rator at the Ruhrlandmuseum in Essen. Under his management, extensive renovations and
new buildings as well as the complete redesign of the exhibitions took place. The renovated
old buildings were reopened in 2012 and the new buildings opened in October 2017.

Ramon Graus
Senior lecturer in History of Architecture at the Universitat Politècnica de Catalunya (Bar-
celona, Spain) and researcher at the Transnational Modern Art and Architecture Networks:
Local-Global (LoG) group.

Paul van de Laar
Head of the History department, Erasmus School of History and Communication and profes-
sor of urban history. From 2013-2020 he was director of Museum Rotterdam. His book (co-
authored with Peter Scholten) on Rotterdam's migration history and policies, *De Echte Rot-
terdammer komt van buiten* (The Real Rotterdammer is a migrant) will be published in 2023.

Tim Marshall
Emeritus Professor of Planning at Oxford Brookes University. His research interests include
planning at regional and national scales, and planning major infrastructure, in the UK and
Europe, as well as the long histories of cities and the role of public and collective action in
steering cities. His most recent book is *The Politics and Ideology of Planning*, 2020.

Manel Martín Pascual
Doctor in Contemporary History, he is a retired professor of social sciences in secondary
education at the Department of Education of the Generalitat of Catalonia. Specialist in the
history of water supply in Barcelona.

Jakob Ingemann Parby
Senior curator, Museum of Copenhagen. Recent projects: Curator of the permanent galleries
at the new Museum of Copenhagen, author of *København og historien*, vol. 6, *Den grænseløse
by 1850-1920*, P.I for the research and dissemination project Sounds of the capital on the audi-
tive and sonic history of Copenhagen, 2019-2024.

Joan Roca i Albert
Trained as an urban geographer, since 2007 he has been the director of MUHBA (the Barcelona History Museum). In 2010, he created the City History Museums and Research Network of Europe and more recently has worked with CAMOC, the ICOM committee for the city and its people, as well as participating in EMYA, the European Museum of the Year Award.

Jette Sandahl
Has been founding director for two pioneering new museums, the Women's Museum of Denmark and the Museum of World Cultures in Sweden. She has served as Director of Exhibitions and Public Programs at the National Museum of Denmark, and as Director Experience at National Museum of New Zealand Te Papa Tongarewa. Most recently, she was director of the Museum of Copenhagen, Denmark.

Joana Sousa Monteiro
Director of the Museum of Lisbon since 2015. She was a museum adviser to the Lisbon Councillor for Culture (2010-2014) and Assistant Coordinator of the Portuguese Museums Network at the National Institute of Museums (2000-2010). She was trained in Art History, Museology, and Arts Management. She has been Chair of the ICOM International Committee for the Collections and Activities of the Museums of Cities (CAMOC, 2016-2022).

Paul Spies
Art historian and archaeologist of the ancient world. From 2009, he was director of the Amsterdam City Museum, and since 2016 he has been director of the Stadtmuseum Berlin and chief curator of the Federal State of Berlin exhibition at the Humboldt Forum.

Rosa Tamborrino
Professor of Architectural and Urban History at Politecnico di Torino. Her research focuses on urban history and cultural heritage and digital humanities methodologies. Among her publications are *Digital Urban History. Telling the history of the city at the age of the ICT revolution*, (Rome: CROMA-Università di Roma Tre, 2014). In 2017-2022 she was the President of AISU, the Italian Association of Urban History.

Michał Wisniewski
Holder of a PhD in Art History (Jagiellonian University, Kraków) and an MA in Architecture (Kraków University of Technology), Fulbright Fellow. Assistant professor in the Department of Economic and Social History and the UNESCO Chair for Heritage and Urban Studies at the Kraków University of Economics. Head of the Educational Department of the Academy of Heritage at the International Cultural Centre in Kraków. Research interests: architecture history, urban studies, cultural heritage management.

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