

## Of Gaps and Continuity:

### Diachronic Digital Narrative of Dennys Lascelles Wool store, Geelong.

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## Introduction

The city of Geelong and its hinterland are in the process of transformation as its major industries are shutting down and replaced by luxury housing, hotels, and modern office buildings etc. Thus the lasting legacy of wool Industry architecture including the legendary Bow Truss Building and many others are eventually on the verge of getting lost from the memories of city dwellers. The loss of tangible as well as the intangible memories at the cost of development raises questions about gaps, or histories untold regarding the industrial past and heritage of the city. This vacancy resulted in a discontinuity in the heritage narrative of the city and the place. Based on the premise that architecture could be a unique and revealing frame of inquiry to gain insight into human nature, attitudes, values, worldviews, and immaterial/material culture (Scriver and Prakash, 2007), the main aim of the project is to address this gap using a diachronic modeling as a tool to reconstruct and recollect the past of Geelong's wool industry. With the aim of improving the access of general audiences to the architectural–archaeological heritage content of Geelong's history, the project caters two main problems:

1. To respond the apparent lack of resources in terms of archaeological remains, archival visual materials and fragmented written narrative of the building by developing a diachronic digital model visualizing the lost architectural asset of Dennys Lascelles wool store that is available for further exploration and study. The key idea is to initiate and demonstrate the process of understanding how digital placemaking can complement physical placemaking, and vice-versa, through utilization and reconstruction of collected heritage material.

2. To explore and establish a new conceptual framework that will define successful relationship between recollection and (collective) memories and multiple narratives of the place for further scientific research. As a initial response the team created a web-based framework for bottom up user-based and user-driven storytelling

online immersive environments, which can further be reapplied in the heritage industry with the purpose of meaningful, ethical, and community driven representation of the past.

## Diachronic Modeling of the Lost Building

The proposed Diachronic or Geo-Spatial modeling is based on the premise that consider architecture as a process rather than product (Rashid and Antej, 2020) . It relies hugely on a linked open database (LOD) for data collected for a particular site from the earliest known date. This LOD usually collates all the relevant information in a scientific way and tries to fill in the lacuna using scientific/architectural reasoning by observing other social, political, cultural, and economic, etc., conditions. Based on this analysis, it proposes a possible three-dimensional transformation of the site in four-dimensional coordinates (X, Y, Z, and T) that is also linked with particular conditions both diachronically and synchronically (Rashid 2013) . It places a building in the crossroads of multiple historic narratives both tangible and intangible. The novelty lies in applying the visualization capabilities provided by developments in digital design to make clear the multiple aspects of heritage buildings, particularly the aspect of firm relations between architecture physicality and memory for the purpose of recording and disseminating of architectural heritage—showcasing how the building was actually conceived, constructed, and used—and in so doing, unraveling multiple historical layers and connection to a broader geographical and cultural domain, which is handy for researchers in architectural history, urban design and heritag studies ( Rashid and Antej, 2020) .

## 3D Modeling of the Lost Bow Truss Wool Store Building:

The main challenge at the beginning of this research was the limited visual reference, such as floor plans and other drawings. Absence of the construction documentation also means it was practically impossible to rebuild all architectural details. Therefore, it was decided to make the 3D model to match as close as possible with the collected sets of textual and visual references from archival documents. Some former studies by architectural historian Miles Lewis (Lewis, 1988), provided valuable insights into the construction of the giant concrete bow trusses pass and the sawtooth roof structures.. In addition, some archival images particularly captured the key features of the building, including location, facades, roof panels, truss pairs, northeast entrance, and the demolition photos, revealing the internal structure of the building. Moreover, both the TAC building at the site and the remaining adjacent heritage architecture, now known as the National Wool Museum, also offer useful reference to speculate dimensions for the Bow Truss wool store building. At this stage, there was no continuous visual narrative of the building, but what was developed is fragments of images of different parts of the building as baseline data. This problem was addressed by an iterative modeling process with the data in hand. Initially a set of measured drawings of the building was prepared using images and reverse calculating the dimensions from old images. These initial drawings were used as baseline data for modeling. Later, newer data were continuously collected, managed, and analyzed to serve as historical reference inputs for the iterative 3D modeling in Rhino.



Fig1 . The photo of the interior (left) serves as the reference to reveal the roof and ceiling structural components, represented through the digital reconstructed model (right).



Fig. 2. Left: the photo of the bow truss structure above the saw-tooth roof system. Right: the digital reconstructed model of the bow truss roof is modeled based on the reference of the previous photo.

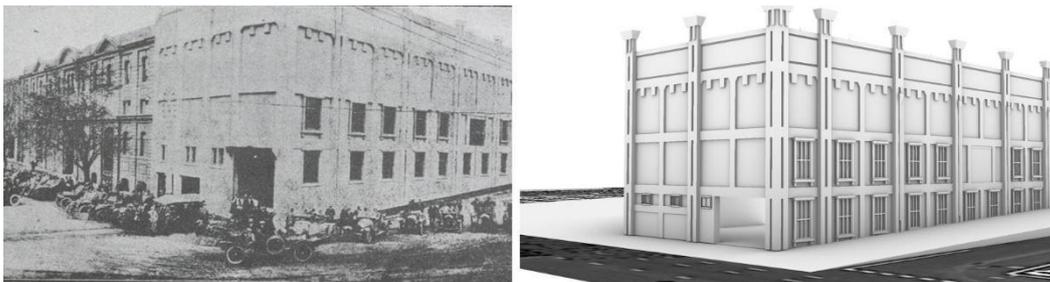


Fig.3 The north facade and entrance of the lost wool store (left) as the reference for the overall exterior features and elements of the facade (right).

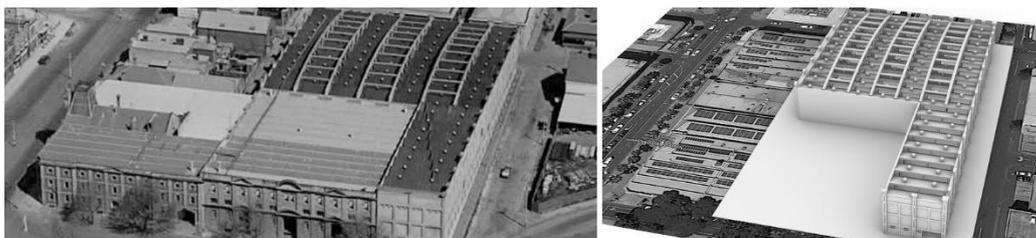


Fig. 4. The bird-eye view photo (left) as the reference for the overall roof structure and facade of the digital reconstruction (right).

### Representation of the Architectural Narrative

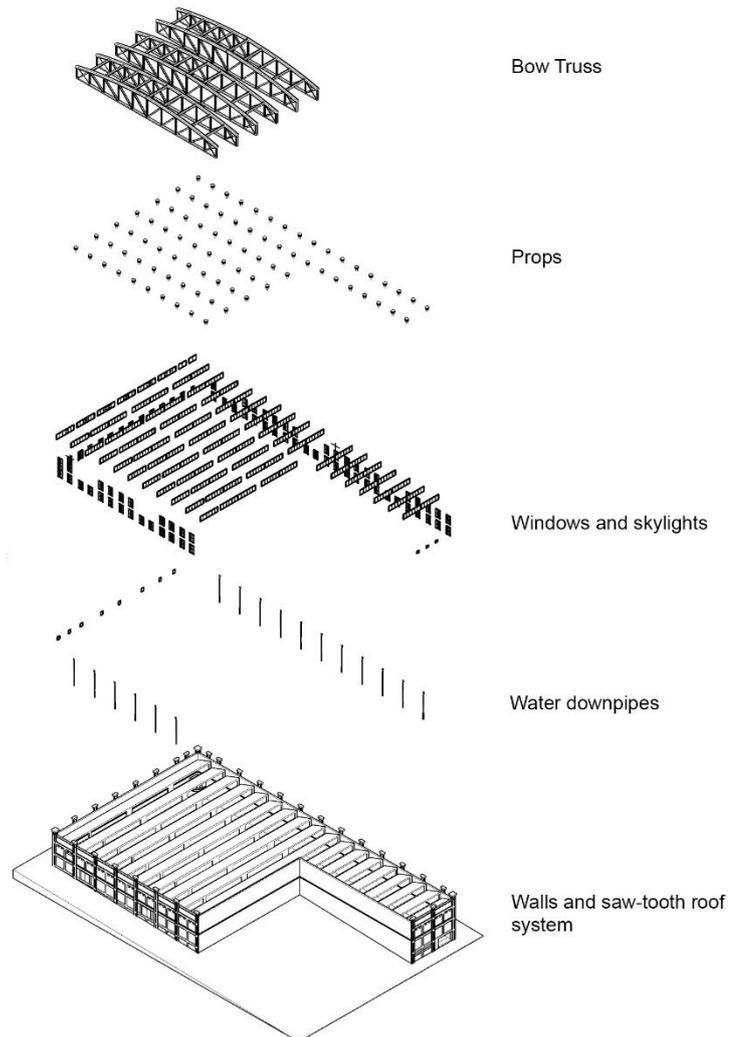


Fig. 5 Exploded isometric view illustrated the various components to form the overall Bow Truss wool store building.

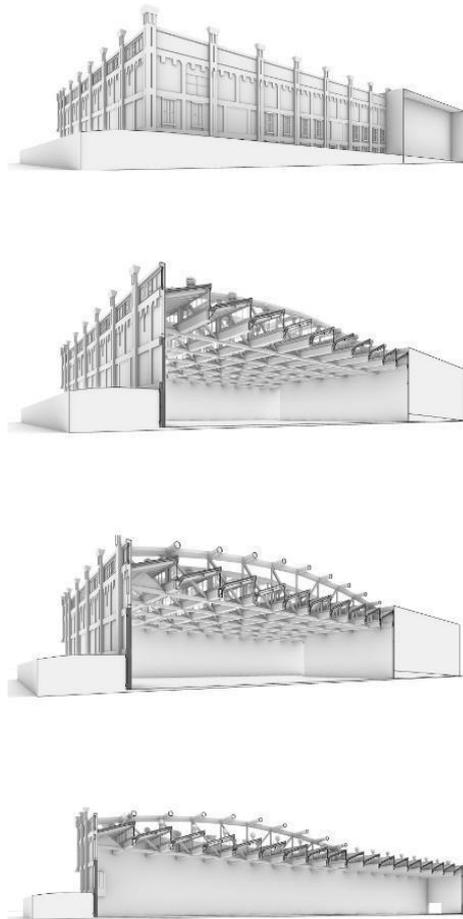


Fig. 6. The sequential sectional perspectives to demonstrate the roof structure that consist of the various components include the reinforced concrete bowstring trusses and saw-tooth roof system.

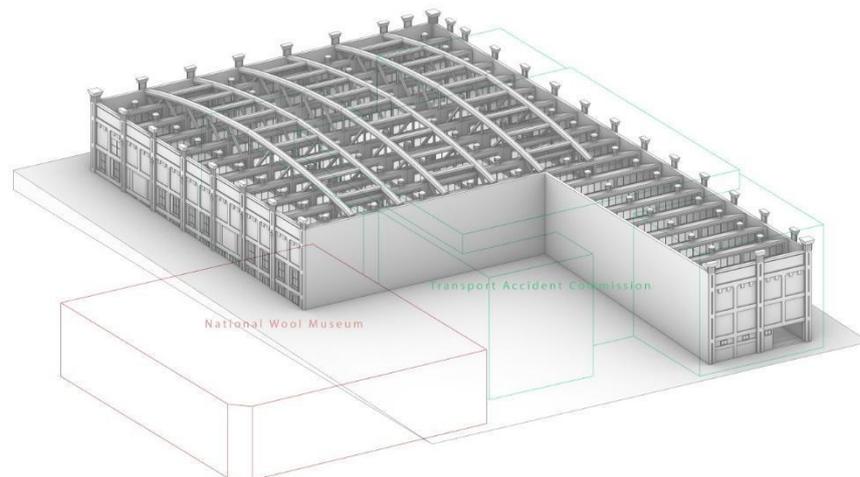


Fig.7. The three-dimensional (3D) visual comparison of the geometric volume between the existing National Wool Museum, Transport Accident Commission (TAC) building and the lost Bow Truss building.

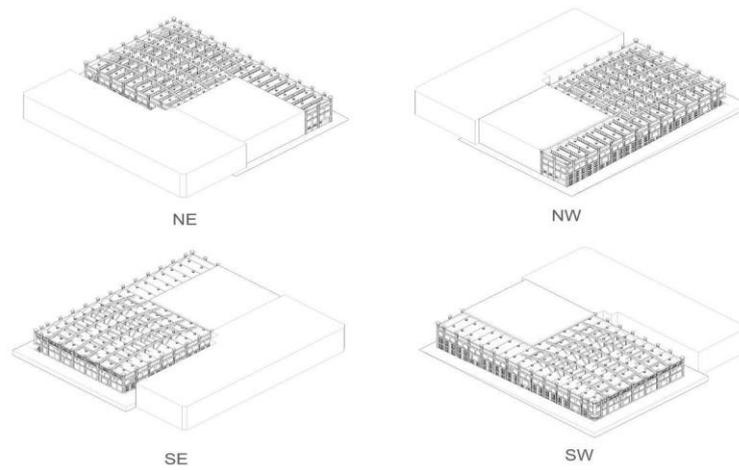


Fig.8. The various isometric views of the Bow Truss building: northeast, northwest, southeast, and southwest.

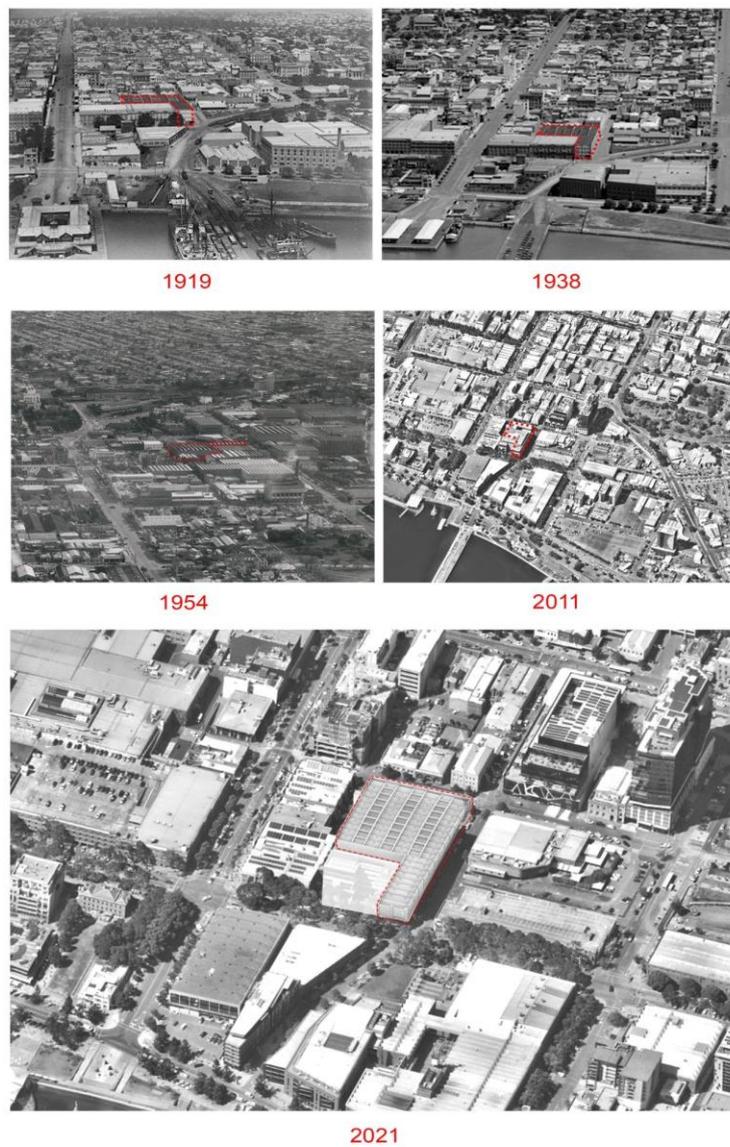


Fig. 9. Aerial images showing the urban transformation in the last one century around the site.



Fig. 10. Proposed Augmented Geelong app interface with QR code to illustrate the gamified 'outdoor museum' setting of the stages of the lost building: Lascelles Wool Store .

## Conclusion:

The novelty of this ongoing reactivation project lies in the unique, intertwined, and inclusive narrative of the past and its dissemination to the wider audience with a simpler user interface. These dynamic and hybrid narratives has the scope to create an immersive heritage experience, through spatial and non-linear storytelling, which would help revive and communicate entangled cultural memories within the community and facilitate unique and creative interpretation of memories in connection to place. The idea is to reconstruct the lost heritage building to define its place in the collective conscience of the present-day Geelong Community and beyond in a tangible and accessible format. The project is currently ongoing, at this stage the research team is testing the scope of a developing an app "Augmented Geelong" (AG) that could be used via QR (Quick Response) code to interact with the past of the city of Geelong. The QR codes, set up in different historical locations in the city, would allow anybody including visitors and tourists an easy access to the interactive mixed-reality historical narrative of the specific place and the town. The purpose is to reactivate the past in a gamified 'outdoor museum' setting. By engaging in this digital resurrection of the past, the user will be informed and be able to experience the historical narrative in an interactive manner and, moreover, develop a sense of pride and belonging in the process.

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## Conflict of Interests Disclosure

There is no apparent conflict of interest related to the paper.

## Author Contributions

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**Writing – original draft:** Md Mizanur Rashid

**Writing – review & editing:** Surabhi Pancholi

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