

# Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



## Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners ([Examencommissie-BK@tudelft.nl](mailto:Examencommissie-BK@tudelft.nl)), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	Lucas Hartog
Student number	5000440

Studio		
Name / Theme	Architectural Engineering	
Main mentor	Anne Snijders	Architecture
Second mentor	Wido Quist	Heritage
Argumentation of choice of the studio	<p>What drew me to the Architectural Engineering graduate studio was the freedom to define my own project, allowing me to focus on my interest in brutalist architecture. I was also attracted by the studio's emphasis on technical development, aligning with my interest for making architectural ideas both physically and functionally viable—an interest deepened during my bachelor's and master's and during my internship at cepezed. The studio's clear two-semester structure, separating research and design, further appealed to me by supporting a more in-depth and scientifically grounded project.</p>	

Graduation project	
Title of the graduation project	Re-Imagining Brutalism: Transformation of a brutalist structure for modern use while integrating its architectural aesthetics
Goal	
Location:	<p>Bellevue, The Hague, The Netherlands</p> <p>Kon. Julianaplein 2, 2595 AA Den Haag</p>
The posed problem,	<p>Brutalist architecture faces risk of demolition despite a growing movement advocating for its preservation. Recent transformation projects often introduce contrasting design elements that may undermine the characteristics of brutalism. This raises an important issue: how to appropriately transform brutalist buildings while respecting their defining characteristics?</p>

research questions and	How can brutalist architecture be understood through its makeability?
design assignment in which these result.	The design assignment focuses on transforming the Bellevue building from a rigid, monofunctional office building into a mixed-use structure while integrating the defining brutalist aesthetics of the building
<p>Brutalist structures in the Netherlands that do not qualify for a monumental status are often at risk of demolition. Such is the case with the Bellevue building in The Hague, which is planned to be torn down to make way for two 180-meter towers. However, demolition is increasingly seen as a less viable option as there is a growing movement in the architecture field that advocates working with the current building stock rather than engage in the unsustainable cycle of demolition and construction.</p> <p>Although many brutalist structures have been transformed in the past, it is worth questioning whether these interventions preserve the core characteristics of the style. These adaptations often introduce transparent, lightweight additions that contrast with the visual weight and material rawness central to brutalism.</p> <p>This graduation project aims to demonstrate how the Bellevue building could have been transformed into a mixed-use structure that adds urban value to The Hague. It offers an alternative to the proposed 180-meter towers while preserving the brutalist characteristics that define the building and its architectural style.</p> <p>To gain a clear understanding of the architectural aesthetics of brutalism, a thematic research will be conducted, examining the style through the lens of its makeability. This approach will focus on materiality and construction methods, exploring how these aspects contribute to the distinct expression of brutalism.</p> <p>With this knowledge, a design approach will be developed that integrates the brutalist heritage of the Bellevue building while adapting it to contemporary mixed-use functions, ensuring both preservation and urban contribution.</p>	
<b>Process</b>	
<b>Method description</b>	
<p><b>Research</b></p> <p><u>Literature Study</u></p> <p>The thematic research will begin with a literature study on the evolution of concrete from the 1950s to the 1970s, mainly gathered from architectural books. This will be followed by a focused review of the two key construction methods associated with brutalism. Additionally, essays and critical articles by architecture critic will be examined, primarily from <i>The Architectural Review</i> and <i>Architect Magazine</i>.</p>	

### Case Study Analysis

The literature study conducted during the thematic research will be accompanied by striking images from several case studies, alongside two in-depth case studies for each of the two primary construction methods.

## **Design**

### Site Analysis

A site analysis will be conducted to gain a clear understanding of the Bellevue building's context and surroundings.

### Existing building analysis

The existing Bellevue building will be studied through its floor plans, cross-sections, and façade views to gain a comprehensive understanding of its dimensions, form, and overall structure.

### Mass Study

A massing study will be carried out to explore the impact of adding various volumes on top of the existing building.

### Façade Study

A façade study will be conducted to explore different configurations of the new volume's façade, focusing on materiality, the interplay of lines and relation to the Bellevue building.

### Design Progression

The remainder of the project will follow the design cycle, incorporating the implementation of functions and the integration of the building within its urban context.

## Literature and general practical preference

1. Banham, R. (1955). The New Brutalism. *The Architectural Review*. <https://www.architectural-review.com/archive/the-new-brutalism-by-reyner-banham%20/>
2. Barbican Living. (2024). Rough concrete finish in the Barbican Estate. *Barbican Living*. <https://www.barbicanliving.co.uk/barbican-story/big-ideas/the-concrete-finish/>
3. Bax, M. F. T et al. (1996). The taxonomy of concepts in architecture : some applications and developments. *Open House International*, 21(1), 4-14. TU Eindhoven. <https://pure.tue.nl/ws/files/3123905/Metis250169.pdf>
4. Biber, J. (2022). Brutalism: the language of evil. *Medium*. <https://uxdesign.cc/brutalism-the-language-of-evil-8be09f8c1e93>
5. Bhujon,. (2011). Prefabricated Concrete in UK; from the post-WWII period to the 1960s. *History of Building Technology*. <https://bhujonkang.wordpress.com/2011/02/24/174/#:~:text=fashion%204,was%20the%20first%20priority%20of>
6. Brittain-Catlin, T. (2014). A Taste for Brutalism: Concrete Poetry with Jonathan Meades. *The Architectural Review*. <https://www.architectural-review.com/essays/a-taste-for-brutalism-concrete-poetry-with-jonathan-meades>
7. Cavdar, M. (2021). Formwork construction in the middle of the 20th century and its impact on concrete surface quality. *Professorship of Recent Building Heritage Conservation*. TUM School of Engineering and Design.
8. Daniels, A., M. (2012). Atrocities Should Be Eliminated. *The New York Times*. <https://www.nytimes.com/roomfordebate/2012/04/08/are-some-buildings-too-ugly-to-survive/atrocities-should-be-eliminated>
9. Graf, F. (2019). The Multiple Lives of the 'Unité d'Habitation' (1945-1967-2017). Repetition of Their Iconic Value and Differences in the Construction Systems From Their Development to Their Case Histories. [do\\_co,mo.mo\\_us. https://docomomo-us.org/news/the-multiple-lives-of-the-unite-d-habitation#:~:text=The%20load,The%20highest%20level%20of](https://docomomo-us.org/news/the-multiple-lives-of-the-unite-d-habitation#:~:text=The%20load,The%20highest%20level%20of)
10. Grimley, C., et al. (2010), Tough Love: In Defense of Brutalism. *Architect Magazine*. [https://www.architectmagazine.com/design/tough-love-in-defense-of-brutalism\\_o \](https://www.architectmagazine.com/design/tough-love-in-defense-of-brutalism_o)
11. Groaz, S. (2020). The Swiss Principle of Béton Brut: "Betonkonstruktion". A debate between theory and practice, 1940s-1960s. In Salvatore Aprea, Laurent Stalder (Ed.). *Concrete in Switzerland. Histories from the Recent Past* (pp. 105-114). EPFL Press.
12. Historic England. (2024). Preston Central Bus Station and Car Park. *Historic England*. <https://historicengland.org.uk/listing/the-list/list-entry/1416042?section=official-list-entry>
13. Henley, S. (2017). *Redefining Brutalism* (1st ed.). RIBA Publishing.
14. Designing Buildings. (2022). Concrete compaction. *Designing Buildings: the construction wiki*. [https://www.designingbuildings.co.uk/wiki/Concrete\\_compaction](https://www.designingbuildings.co.uk/wiki/Concrete_compaction)
15. Emami, N. (2021). Volumetric Envelopes: Precast elements in building envelopes. *Building Technology Educators' Society* 2021, 1, <https://doi.org/10.7275/grcb-fr26>
16. ICP (2019). Beautiful and Brutal – 50 years in the life of Preston Bus Station. *In Certain Places*. <https://incertainplaces.org/project/beautiful-and-brutal-50-years-in-the-life-of-preston-bus-station>
17. Jencks, C. (1968). Adhocism on the South Bank. *The Architectural Review*. pp27-30.
18. Jester, T. C. et al. (2014). *Twentieth-century building materials: History and conservation* (Rev. ed.). Getty Conservation Institute.
19. McLaughin, K. (2023). Brutalist Architecture: Everything You Need to Know. *Architectural Digest*. <https://www.architecturaldigest.com/story/brutalist-architecture-101>
20. Mendes, C., J., et. al. (2021). A review on the evolution of Portland cement and chemical admixtures in Brazil. *IBRACON Structures and Materials Journal*. 14(6). e14603.
21. Metha, K., P., et. al. (2001). Building Durable Structures in the 21st Century. *Indian Concrete International*. 75(7), pp. 437-443.
22. MacDonald, S. (2003). *Concrete: Building pathology* (1st ed.). Blackwell Science Ltd.
23. Malathouni, C. (2022). The Use of Glass Reinforced Polyester (GRP) in Preston Bus Station. *Docomomo Journal* (66). pp 94–102. <https://doi.org/10.52200/docomomo.66.11>
24. Millais, M. (2015). A CRITICAL APPRAISAL OF THE DESIGN, CONSTRUCTION AND INFLUENCE OF THE UNITÉ D'HABITATION, MARSEILLES, FRANCE, *Journal of ARCHITECTURE AND*

URBANISM. *Journal of Architecture & Urbanism*. 39(2). pp 103-115.

<https://doi.org/10.3846/20297955.2015.1062636>

25. Niebrzydowski, W. (2019). From "As Found" to Bush-Hammered Concrete – Material and Texture in Brutalist Architecture. *IOP Conference Series: Materials Science and Engineering*. 471(7). 10.1088/1757-899X/471/7/072016

26. Oneply. (2025). The Evolution of Concrete Formwork Systems: An Insight into Modern Techniques. Oneply. <https://oneplyshop.com/blogs/product-use-tips/the-evolution-of-concrete-formwork-systems-an-insight-into-modern-techniques?srsltid=AfmBOop4-FxRJrIx7bHOelfc6VJH4iHAqskMUD2RDcW5ejgS9mlanZNO>

27. Pardo Redondo, G., et. al. (2021). State of Conservation of Concrete Heritage Buildings: A European Screening, Infrastructures. 6(8). Article 109. <https://doi.org/10.3390/infrastructures6080109>

28. Peluso, S. (2024). Brutalism: from architectural movement to global trend. *Salone del Mobile, Milano*. <https://www.salonemilano.it/en/articles/brutalism-architectural-movement-global-trend>

29. Pevsner, N. (1967). Architecture in our Time: the Anti-Pioneers. *The Listener*.

30. Raths, C. H. (1967). Production and Design of Architectural Precast Concrete. *PCI Journal*. 12(3). Pp 18-43. <https://doi.org/10.15554/pcij.06011967.18.43>

31. Redko, G. (2025). Brutalism: Oscar-nominated film has revived interest in a controversial architectural legacy. *University of Portsmouth*. <https://www.port.ac.uk/news-events-and-blogs/blogs/academic-expertise/brutalism-oscar-nominated-film-has-revived-interest-in-a-controversial-architectural-legacy#:~:text=Emerging%20from%20the%20rubble%20of,functionality%20for%20the%20collective%20good>

32. Rijksoverheid. (2024). Bestaande bouw - behoud of sloop als duurzame keuze. Rijksdienst voor het Cultureel Erfgoed. [https://kennis.cultureelerfgoed.nl/index.php/Bestaande\\_bouw\\_-\\_behoud\\_of\\_sloop\\_als\\_duurzame\\_keuze](https://kennis.cultureelerfgoed.nl/index.php/Bestaande_bouw_-_behoud_of_sloop_als_duurzame_keuze)

33. Rybczynski, W. (2017). ARCHITECTURE BRUT OR DEMI-SEC?. *Witold Rybczynski: On Culture And Architecture*. <https://www.witoldrybczynski.com/architecture/architecture-brut-or-demi-sec/>

34. Thoburn, N. (2022). Concrete, Mass and Repetition. *Brutalism As Found*. <https://brutalistasfound.co.uk/concrete-mass-and-repetition/>

35. Van Mead, N. (2019). Brutalist buildings under threat-in pictures. *The Guardian*. <https://www.theguardian.com/cities/gallery/2019/feb/27/mildewed-lump-of-elephant-droppings-brutalist-buildings-under-threat-in-pictures>

36. Van Rijs, J. (2023). On Conservation and Carbon: Why We Should Cherish Our Brutalist Buildings, *MVRDV*. <https://www.mvrdv.com/stack-magazine/4317/jacobvan-rijs-blakeburg-brutalism>

37. Vidler, A. (2014). Troubles in Theory: The Brutalist moment(s). *The Architectural Review*. <https://www.architectural-review.com/essays/brutalism/troubles-in-theory-v-the-brutalist-moments>

38. Vishwakarma, V. (2024). The Rise of Brutalism: Why This Controversial Style is Making a Comeback. *Medium*. <https://medium.com/@monkwriter/the-rise-of-brutalism-why-this-controversial-style-is-making-a-comeback-216e457d7e7a>

39. West, N. (2024). Why is London full of 'ugly' buildings? [Video].

[https://www.youtube.com/watch?v=GMyVM0aQfMI&t=533s&ab\\_channel=IWM%3AConflictExplained](https://www.youtube.com/watch?v=GMyVM0aQfMI&t=533s&ab_channel=IWM%3AConflictExplained)

## Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

The graduation project aligns closely with the 'Stock' domain of the Architectural Engineering studio, which explores the potential of existing buildings by reinterpreting them in response to current and future needs. It also fits well within the master track 'Architecture' by presenting a transformation from a rigid, monofunctional structure into a contemporary mixed-use building, where aesthetics play a crucial role. More broadly, the project aligns with the overarching goals of the master program by rethinking how we engage with existing buildings and the built environment, offering an alternative to the unsustainable cycle of demolition and new construction.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

From an academic perspective, this study contributes to architectural research by offering a focused analysis of brutalism's aesthetic foundations. It connects the subjective nature of aesthetics with the technical principles of architecture, providing a clearer theoretical framework for understanding the distinctive qualities of brutalism. In doing so, it adds to the broader database of architectural theory.

Besides, the graduation project handles the question of what to do with our aging stock of generic brutalist buildings. Instead of writing them off as ugly and outdated, the project explores their potential for adaptive reuse, which is an approach that aligns with today's sustainability goals and the shift towards a circular world. The project aims to contribute to the preservation of these buildings by demonstrating how their structures can be transformed.