

Hasselt University  
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### **Current position**

Professor of Structural and Computational Mechanics  
Construction Engineering Research Group, Faculty of Engineering Technology

### **Education**

PhD in Sciences, Hasselt University, Belgium (2013), thesis: 'Discontinuous modelling of masonry failure'  
Master in Civil Engineering Technology, XIOS University College, Belgium (2008)

### **Research interests**

Structural analysis of timber and masonry structures, structural mechanics, computational mechanics

### **Career**

Professor at Hasselt University, since 2025  
Associate Professor at Hasselt University (2020 – 2024)  
Assistant Professor at Hasselt University (2015 – 2020)  
Post-doctoral researcher at Hasselt University (2013 – 2015)  
Visiting researcher at Delft University of Technology (2012)  
PhD researcher at Hasselt University (2009 – 2013)  
Structural engineer at AB Associates Belgium (2008 – 2009)

### **Research projects and scientific engagements**

Principal investigator of the following recent research projects:

- European Regional Development Fund project 'Construction Campus 2.0 + Application Center Circular Construction (AC<sup>3</sup>)', co-funded by the European Union, budget: 1.79 MEUR, 2024 – 2027
- Technology Transfer project 'HoP\_HoVer: Towards an advantage for timber construction through the development of high-performance timber structures using new structural connection solutions', co-funded by the Flemish Government, budget: 399 kEUR, 2023 – 2025
- Technology Transfer project 'HSBnext: Extra applications for timber frame structures by development and implementation of new insights in the mechanical behavior of timber frame walls', co-funded by the Flemish Government, budget: 232 kEUR, 2020 – 2022
- Technology Transfer project 'InnoMaso: Optimal design of innovative masonry solutions', co-funded by the Flemish Government, budget: 248 kEUR, 2018 – 2020

(Co-)supervisor of the following recent PhD projects:

- 'Mechanical behavior of timber frame structures under combined loading', 2022 – 2026
- 'Mechanical and functional performance of structural hybrid timber-photovoltaic glass façade systems', defended in 2025
- 'Innovative approaches for enhancing mechanical performances of timber-concrete composite floor beams', defended in 2024
- 'Structural resistance and stability of masonry walls with thermal break elements', defended in 2021
- 'Effects of gamma radiation on Fe-rich inorganic polymers – from microscale analysis to model design', defended in 2020
- 'Efficient and robust path-following solution methods and a framework for performance assessment of numerical solutions', defended in 2019

#### Other scientific engagements:

- Member of the Belgian standardization mirror committee “Actions on wood structures – Design (Eurocode 5)” (BBRI-SECO/E25005)
- Member of the Belgian standardization mirror committee “Masonry structures – Design (Eurocode 6)” (BBRI-SECO/E25006)
- Member of the European standardization committee “Eurocode 5: Design of timber structures” (CEN/TC 250/SC 5)
- Member of the European standardization committee working group “Cluster Eurocode 5” (CEN/TC 250/SC 5/WG 3) and subgroup “Diaphragms” (CEN/TC 250/SC 5/WG 3/SG 5)
- Member of the European standardization committee working group “Finite element design” (CEN/TC 250/SC 5/WG 11) and leader of the subgroup “Diaphragms”
- Member of the SECO Technical Advisory Board as expert for timber and masonry structures
- Co-organizer of post-university courses related to the design of timber structures, in collaboration with the Flemish engineering network ie-net and WOOD.BE (2019, 2021, 2023)

#### Managing and teaching activities

- Co-director of the structural lab facilities (ACB<sup>2</sup> - AC<sup>3</sup>) at Hasselt University (Faculty of Engineering Technology)
- Head of the master’s program in Civil Engineering Technology (Faculty of Engineering Technology)
- Head of the board of examination master in Civil Engineering Technology (Faculty of Engineering Technology)
- Supervisor of 6 PhD students, co-supervisor of 9 PhD students, since 2014
- Supervisor of more than 100 master dissertations, since 2009
- In charge of 7 courses in the bachelor’s and master’s program in Civil Engineering Technology (Faculty of Engineering Technology)

#### Scientific publications

Publications are listed on <https://www.uhasselt.be/en/who-is-who/bram-vandoren> (‘Publications’)

#### 8 selected publications:

- B. Vandoren, K. De Proft, A. Simone, and L. J. Sluys. Mesoscopic modelling of masonry using weak and strong discontinuities, *Computer Methods in Applied Mechanics and Engineering* 255, 167-182, 2012.
- B. Vandoren, K. De Proft, A. Simone, and L. J. Sluys. A novel constrained LARge Time INcrement method for modelling quasi-brittle failure, *Computer Methods in Applied Mechanics and Engineering* 265, 148-162, 2013.
- G. Cai, J. Zhao, H. Degée, and B. Vandoren. Shear capacity of steel fibre reinforced concrete coupling beams using conventional reinforcements, *Engineering Structures* 128, 428-440, 2016.
- B. Vandoren and A. Simone. Modeling and simulation of quasi-brittle failure with continuous anisotropic stress-based gradient-enhanced damage models, *Computer Methods in Applied Mechanics and Engineering* 332, 644-685, 2018.
- J. Zhao, G. Cai, A. S. Larbi, Y. Zhang, H. Dun, H. Degée, and B. Vandoren. Hysteretic behaviour of steel fibre RC coupled shear walls under cyclic loads: Experimental study and modelling, *Engineering Structures* 156, 92-104, 2018.
- M. Deyazada, B. Vandoren, D. Dragan, and H. Degée. Experimental investigations on the resistance of masonry walls with AAC thermal break layer, *Construction and Building Materials* 224, 474-492, 2019.
- C. Driesen, H. Degée, and B. Vandoren. Efficient modeling of masonry failure using a multiscale domain activation approach, *Computers & Structures* 251, 106543, 2021.
- E. Appavuravther, B. Vandoren, and J. Henriques. Behaviour of screw connections in timber-concrete composites using low strength lightweight concrete, *Construction and Building Materials* 286, 122973, 2021.