

Curriculum Vitae

Daria Ardant
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French
13.10.1992 (Milan)



Education

- 2019-2024 **PhD in Civil Eng.** (Chair of Sustainable Construction - IBI -DBAUG ETHZ - Switzerland)
PhD title: Identifying critical parameters for robust poured earth application
- 2014-2017 **Master degree in Architecture - obtained with honors** (ENSA Paris Malaquais - France)
Project of end of studies: Between high tech and low tech to provide earthen construction in seismic areas
Master Thesis The interlocking CEB Osteobrick: Characterization and shear testing
- 2011-2014 **Bachelor degree in Architecture** (ENSA Paris Malaquais - France)

Experience

- 2018- **Scientific Assistant** (Chair of Sustainable Construction - IBI -DBAUG ETHZ - Switzerland)
Poured earth formulation for back filling application, supervision, teaching and workshop organization
- 2017-2018 **Architect Junior - Joly et Loiret** (Paris - France)
Project Cycle Terre, Competition for a school at St Germain en Laye (won), Project Ivry Terre d'ici
- 2016 **Intern (Scholarship) - Renzo Piano Building Workshop** (Genoa - Italy)
Project Emergency Children's Hospital in Uganda (1st RPBW building in rammed earth [mock up, drawing])
- 2016 **Intern - Université Gustave Eiffel - Navier Cermes** (Marne la vallée - France)
Research on interlocking CEB following the master thesis results

Publication

- C. Brumaud, Y. Du, **D. Ardant**, G. Habert, *Earth, the new liquid stone: development and perspectives*, *Materials Today Communication* 39 (2024) 108959. <https://doi.org/10.1016/j.mtcomm.2024.108959>
- **D. Ardant**, C. Brumaud, N. Zosso, E. Bernard, G. Habert *Impact of silt chemical composition on deflocculation and coagulation of clay rich paste* *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 694 (2024) 134147. <https://doi.org/10.1016/j.colsurfa.2024.134147>
- **D. Ardant**, C. Brumaud, A. Perrot, G. Habert, *Robust clay binder for earth-based concrete*, *Cement and Concrete Research* 172 (2023) 107207. <https://doi.org/10.1016/J.CEMCONRES.2023.107207>
- **D. Ardant**, C. Brumaud, G. Habert, *Tackling the variability of clay to provide a robust binder*, *Construction Technologies and Architecture*, 1 (2021) 725-729. <https://doi.org/10.4028/www.scientific.net/CTA.1.382>
- **D. Ardant**, C. Brumaud, G. Habert, *Influence of additives on poured earth strength development*, *Materials and Structures* 53 (2020) 1-17. <https://doi.org/10.1617/s11527-020-01564-y>
- **D. Ardant**, P.E. Loiret, S. Joly, *Terre crue: de la matière à la culture constructive*, *Maisons Paysannes de France*, (2018), 208, pp.27

Conference and presentation

- **D. Ardant**, C. Brumaud, A. Perrot, G. Habert, *Identification of the two parameters controlling compressive strength of earth materials at dry state - 5th International Conference for Bio-Based Materials (ICBBM) - Vienna 2023*
- **D. Ardant**, C. Brumaud, G. Habert, *A way to improve poured earth properties without hydraulic binder - 1st RILEM International Conference for Earthen Construction (ICEC) - Paris 2022*
- **D. Ardant**, C. Brumaud, G. Habert, *Tackling the variability of clay to provide a robust binder - 4th International Conference for Bio-Based Materials (ICBBM) - Barcelona 2021*
- **D. Ardant**, C. Brumaud, G. Habert, *The slower it is, the stronger it will be: How to improve poured earth strength without stabilization - Tagungsbeiträge der 8. Internationalen Fachtagung für Lehm- und Ziegelbau (LEHM)-Weimar 2020*

- **D Ardant**, *Excavate, Innovate, Build: The use of earth as a multifunctional, low carbon and circular material*, Partnership Energy Council 2024
- **D. Ardant**, *Apprehend the earth variability and its impact on the yield stress calculation through the use of the YODEL - Young researcher presentation - Online TC PEM 2023*
- **D. Ardant**, *Terre coulée avec additifs: avancés et recherche en cours, Construire en terre coulée aujourd'hui, (formation amàco) - 2019 and 2023*
- **D Ardant**, *The diversity of poured earth technics, CAS - Regenerative materials - Essentials (Chair of Sustainable Construction) - 2019-2021*

Supervision and workshop

- **Master thesis**
Xenia Burkard *Toward compressive strength prediction of earth in real condition: Influence of moisture DBAUG-ETHZ - 2023*
Fatma Nur, Luca Riggio, Timothy Allen, Romana Duttweiler, Sina Lengener *Dauerhaftigkeit von Erde. Bolthausen Studio DARCH-ETHZ 2021*
- **Master project**
Nino Zosso *Effectiveness of coagulation by MgO for various dispersed clay suspensions DMAT-ETHZ 2023*
Leila Maanna *The impact of aggregates on poured earth properties DBAUG-ETHZ 2022*
- **Bachelor thesis**
Jill Wachsmuth and Noemi Engeler *Mix design strategy to reduce the poured earth shrinkage DBAUG-ETHZ 2023*
Lea Wenger and Xenia Burkard *Lab at home to determine the accuracy of earth on-site characterization DBAUG-ETHZ 2021*
Katharina Westermann *Influence of lightweight aggregate's coating on poured earth strength DBAUG-ETHZ 2020*
Olivia Beck *Influence of the aggregate shape and type on the properties of poured earth DBAUG-ETHZ 2020*
Estrella Ghielmini and Viviane Hoffmann *The use of waste in clay materials DBAUG-ETHZ 2019*
- **Internship**
Mathieu Lecaille *Massifier la construction en terre crue en Suisse Departement Low-tech - Central Nantes 2023*
- **Workshop**
New materiality for the passage Notre Dame 5-16th September 2022
Creation of mock up in stabilized and adjuvanted poured earth
FIBRA award 2021 - Zurich Canceled (COVID)
Construction of a 6m long bridge in bamboo with the architect Andres Böppler and two load bearing straw-ball wall with earth plaster
CAS Regenerative Materials - Essential- Winter 2019-2022
Carazas matrice and poured earth matrice (Habert test and Brumaud test)

Award, membership

- Prix Jeunes Diplomés - M.A.F. Académie d'Architecture 2018
- RPBW scholarship *Fondazione Renzo Piano 2016*
- Active member of the Technical Committee Process of Earth-Based Material (PEM) *RILEM 2023-*

Languages and skills

- **Languages**
French Native, English C1, German B1, Italian A2
- **Skills**
Laboratory *Rheometer, XRD (qualitative/ quantitative), zeta potential, earth analysis, mixing process and samples testing*
Mock up *Wood work, 3D printing, lasercutter*
Software *Windows suite (Word, Excel, PPT), Adobe suite (Ps, Ai, Id, Ae), Drawing and modeling (Autodesk, Rhino3D)*

Hobbies

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| Long duration hiking | Others |
| GR10 - Pyrénées 2017-2021 | Piano |
| Swiss Path 6 2022 | Brewing craft beers |
| Via Alpina 2024 | Astrophotography |