**Proposal for a master thesis**

**Master Programme Infrastructure and Environmental Engineering 2025/26**

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| **Title** |
| Master Thesis Proposal 7: Creating a Holistic Learning Environment for Adolescent Mothers – Architectural, Educational, and Environmental Design for Tumaini Open School |
| Description background and problem description, app. 150-500 words |
| **Background:** A safe, functional, and empowering school environment is critical for adolescent mothers to thrive academically and emotionally. Tumaini Open School has a unique opportunity to set a new standard for inclusive, learner-centered infrastructure in rural Tanzania.**Aim:**To design and propose improvements for educational spaces and support facilities that optimize learning, thermal comfort, privacy, and dignity, especially for adolescent girls.**Objectives:*** Assess existing learning environments (classrooms, outdoor spaces, dormitories) and identify gaps in comfort, lighting, acoustics, and flexibility.
* Explore economically viable best practices in educational architecture for vulnerable populations in East Africa.
* Develop recommendations for gender-sensitive infrastructure: menstrual hygiene rooms, childcare spaces, breastfeeding areas, and wellness rooms.
* Evaluate classroom ventilation, insulation, daylighting, and noise control to improve concentration and reduce fatigue.
* Propose spatial routines, teacher-led interventions, and landscape features (e.g., shaded study zones) to support mental wellbeing.
* Collaborate with teachers to establish pedagogical routines that improve student outcomes.

**Methodology:**User experience studies, architectural assessments, environmental performance modeling, participatory workshops with students and staff, and a review of UNESCO and UNICEF guidelines on inclusive school design.**Expected Outcomes:**An integrated spatial master plan with design details for optimized learning environments, facility upgrades, and operational routines. Recommendations will support increased attendance, academic performance, and student wellbeing. |
| **Literature suggestions** |
| Suggestion: |
| **Special prerequisites** e.g. courses |
| The master thesis will require that you visit Tanzania for three months in order to conduct field work. Funding for your field studies can be applied for via the link below:1. [Nils Rud Olson minnesfond (chalmers.se)](https://www.chalmers.se/utbildning/studera-hos-oss/studentliv/stipendier-for-studenter/nils-rud-olson-minnesfond/)
2. [The Global Mentorship Program (chalmers.se)](https://www.chalmers.se/en/education/study-at-chalmers/student-life/scholarships-for-enrolled-students/the-global-mentorship-program/)
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| **Specific timeframe** (start date-end date, if needed) |
| Starting from the beginning of 2026 until the end of the academic year. |
| **Supervisors** (name, email) |
| Unkown  |
| **Examiner** (name, email) |
| Unkown |
| **Other information** |
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