



School of Computing, Engineering, and the Built Environment Edinburgh Napier University

PHD STUDENT PROJECT

Application instructions:

Detailed instructions are available at :

<https://www.napier.ac.uk/research-and-innovation/doctoral-college/how-to-apply>

Prospective candidates are encouraged to contact the Director of Studies (see details below) to discuss the project and their suitability for it.

Project details

Supervisory Team:

- DIRECTOR OF STUDY: Dr Elena Prokofieva (Email: e.prokofieva@napier.ac.uk)
- 2ND SUPERVISOR: tbc

Subject Group: Built Environment

Research Areas: Built Environment

Project Title: Design for environmental comfort school in classrooms for full inclusion of students with special and behavioural needs

Project description:

Effective classroom design can significantly enhance the learning experience, support inclusivity, and ensure that all pupils have equitable access to education. In UK the children with special behavioral and health needs are encouraged to be taught in the modern schools which have their needs addressed.

Environmental comfort is key for educational process, which affects cognitive skills, concentration on the subjects, as well as allows to feel comfortable and welcomed in the learning environment. Environmental comfort includes ventilation, acoustic treatment, humidity and temperature variations monitored and controlled to create the best learning environment. These characteristics should be embedded into design and maintenance of the classrooms (such as mechanical ventilation system, variable acoustic treatments, air conditioning, CO2 monitoring etc).

The children with special health and behavioral needs require the environmental treatments tailored for their comfort. The study will focus on creating the patterns and

examples on how different treatments can be beneficial to pupils and can be implemented in modern school designs.

References:

- [1] Building Bulletin 93
- [2] Building (Scotland) Regulations

Candidate characteristics

Education:

Minimum 2:1 degree in the following subject areas - Maths, engineering, chemistry would be beneficial

Subject knowledge:

Architectural technology, Renewal energy, Special needs assistance degree

Essential attributes:

- Understanding architectural design
- Understanding health and behavioral special needs

Desirable attributes:

- Understanding principles of design for ventilation
- Understanding thermal comfort