

# CURRICULUM VITAE

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Anna Staszczuk, Ph.D

## Education

I graduated from UNIVERSITY OF ZIELONA GÓRA in 1999. I completed the first cycle programme - bachelor's degree. I studied at the Faculty of Civil and Environmental Engineering, in subject area of study: environmental engineering. My undergraduate thesis was entitled: *A solution to wastewater management for the commune of Dąbie*.

Later I started the second cycle programme – master degree at the same faculty and specialization and I finished my higher education in 2001. The title of my Master thesis was: *The estimate of floor thermal dimensioning methods*. Professor conferring the degree was Professor Tadeusz Kuczyński.

I finished post-diploma studies “Heating and heat engineering with energy auditing” at WARSAW UNIVERSITY OF TECHNOLOGY, at the Faculty of Environmental Engineering in the Institute of Heating and Ventilation in 2004. The title of my post-diploma thesis was: *Chosen aspects of adapting heating systems using energy from renewable sources on the example of a heat pump and solar energy collector*.

While studying the first cycle programme I completed interfaculty pedagogic study. I gained the qualification for teaching.

In 2011 at AGRICULTURAL UNIVERSITY IN CRACOW, at the Faculty of Environmental Engineering and Geodesy I completed my Ph.D thesis entitled: *Influence of chosen factors on the calculation accuracy of heat exchange between building and the ground with applying quasi-stationary methods*. Professor conferring a degree was professor Jan Radoń. My Ph.D thesis was awarded by the Faculty Board and Rector of University of Zielona Góra.

*Determination of my Ph.D*

*Scientific field:* Agricultural science

*Scientific discipline:* Environmental control

*Scientific speciality:* Microclimate control in buildings

## Employment

Since 2006 I've been working at University of Zielona Góra in the Institute of Structural Engineering. I am an Assistant Professor.

Earlier I had been working in a heating enterprise, which was concerned mainly with heat distribution from the municipal heating network to meet the heating needs of Zielona Góra City. My scope of du-

ties was to provide customers with technical and economical analysis, technical advice as well as analyses of development trends, etc.

## Academic career and research scope

My Master thesis referred to heat exchange between the building and the ground in the aspect of energy saving. Then I decided to continue research in this field.

My PhD thesis provides comparative results of calculations of heat exchange between the building and the ground and the typical residential buildings while applying two methods: simplified (quasi-stationary) and more accurate (transient heat flow) one. In my PhD thesis I determine the impact of such characteristics as the building's geometry, basement floor depth, construction of earth-contact assemblies and heating mode on calculations accuracy. The simplified method calculations are performed by me in accordance with currently valid Standard EN ISO 13370. For analysis of the transient heat flow in the ground beneath the heated building, a 3D model taking into account full thermal coupling of the building with ground was drawn up. The model is based on finite balance method. Comparative estimates concerning transient, 3D, heat flow are performed with a computer software WUFI®plus. As a result I specified the differences of heat flows obtained while applying more exact and simplified methods.

## Main research interests

- building physics issues, especially thermal building physics and heat exchange between the building and the ground (3D transient modelling using Wufi+software);
- environment control according to sustainable development assumptions;
- microclimate control in buildings (first of all passive cooling technique);
- passive and low energy buildings;
- rational management of energy demand in buildings;
- heat energy storage;
- renewable energy;
- LCA and LCC analysis.

## National and international projects

1. Strategic research project within the framework of National Centre of Research and Development (2010-2012) entitled: **Integrated system of decrease of exploitative embodied energy of buildings.**

Task 6: *Analysis of technical and exploitative requirements for buildings supplied from centralized sources of heat energy.*

I was member of the research team

2. A Project within the framework of INTERREG Program of Cooperation Poland-Brandenburg (2007-2013); **Cooperation of University of Zielona Góra and Brandenburg University of Cottbus in "Green energy"**

Subproject 2: *The factors determinative effectiveness of heat energy using in residential buildings.*

I was subproject leader

3. A Project within the framework of INTERREG VA Program of Cooperation Poland-Brandenburg (2014-2020); **Cooperation of scientific partners in the field of education and exchange of knowledge on energy storage and energy efficiency technologies in the SNB region.**

I am manager of polish part of the project

## Key publications

1. A.Staszczuk, M.Wojciech, T.Kuczyński,: *The effect of floor insulation on indoor air temperature and energy consumption of residential buildings in moderate climates*. Energy, Vol.138, pp. 139-146, 2017.
2. A.Staszczuk: *Comparison of the calculation results of heat exchange between a single-family building and the ground obtained with the quasi-stationary and 3-d transient models. Part 2: intermittent and reduced heating mode*. Civil and Environmental Engineering Reports, No. 24 (1), pp. 133-144, 2017.
3. Z.Lipnicki, M.Gortych, A.Staszczuk, T.Kuczyński: *The theoretical analysis of mass and energy flow through solar collector – chimney system*. Civil and Environmental Engineering Reports, No. 24 (1), pp. 117-131, 2017.
4. A.Staszczuk, T.Kuczyński: *Effect of extending hot weather periods on approach to floor construction in moderate climate residential buildings*. Civil and Environmental Engineering Reports, No. 20, pp. 159-170, 2016.
5. A.Staszczuk, T.Kuczyński, M.Wojciech, P.Ziembicki: *Comparative calculation of heat exchange with the ground in residential building including periodes of heat waves*. Civil and Environmental Engineering Reports, 2016, No. 21, pp. 109-119.
6. A.Staszczuk: *Comparison of the calculation results of heat exchange between a single-family building and the ground obtained with the quasi-stationary and 3-d transient models. Part 1: continuous heating mode*. Civil and Environmental Engineering Reports, No.8, pp. 77-87, 2012.

## Interests

My main interests are literature, especially poetry and scientific literature for general public.

I am the co-author of almanacs of the Wrocław literary group *Dissonance* as follows:

1. *Uwikłania (Involvements)* Wrocław 1999,
2. *Oddychać niebiem (To breathe the sky)* Wrocław 2000,
3. *Wciąż w drodze (Still on the way)* Wrocław 2009.

I am an author of poetry book *Czerwieni się zieleń traw (The green of grass is blushing)* Zielona Góra 2016.