

EDUCATION

Imperial College London

PhD, Civil and Environmental Engineering

2012–present

My thesis has the working title ‘*Highly integrated urban water, waste and energy resources*’. The primary aim is to build models which optimise the management of water, waste and energy in a city, taking advantage of the synergies and linkages between these systems. The ‘urban metabolism’ concept will be used as a way of measuring the success of the models. Having reviewed the literature of many existing models, I am now moving to build a simple model to optimise resource management for an agrarian community in Vietnam.

Imperial College London

MEng, Civil and Environmental Engineering

2008–2012

Achieved Grade: First class honours.

Relevant modules: Operations Research and Systems Analysis, Water Resources Engineering, Computational Analysis, Statistics, Environmental Engineering, Mathematics and an Introduction to Economics and Accounting.

Final year individual project: This followed on from a summer research placement (2011) and explored the carbon mitigation potential of domestic heating technologies. Control strategies were developed which minimise the carbon emissions from a heating system whilst maintaining suitable comfort levels in a home. The work involved simulating domestic heating systems and working with large data sets. It is anticipated that this study will be published as a journal paper.

Ripon Grammar School

2001–2008

A-Level: Maths (A), Physics (A), Religious Studies (A).

AS-Level: Music (A).

GCSEs: Eight A* and two A grades.

EXPERIENCE

Grantham Institute

Undergraduate research placement

Imperial College London

Summer 2011

Ten week research placement investigating the carbon mitigation potential of domestic heating technologies. This mainly consisted of regression analysis on a large data set which contained information about the energy usage of micro combined heat and power processors. During this project, I taught myself the programming language *R*.

Third year group project

Imperial College London

Summer 2011

Eight week project as part of a team of eight. We worked together to propose a sound business case for a large inter-oceanic crossing through Nicaragua which would be able to compete with the Panama Canal in light of its expansion in 2014.

Constructionarium

Imperial College London

Summer 2010

Five days in the field working in a large group to build a scaled-down version of a real engineering structure.

North of England Refugee Service

Voluntary Work

Middlesbrough

Summer 2009

Voluntary work helping refugees find housing, access benefits and obtain legal documents. Daily activities included writing letters, liaising with the home office and interviewing clients.

Holy Trinity Infants School

Voluntary Work

Ripon, North Yorkshire

2007

Voluntary work (one afternoon per week) as a classroom assistant, for one year during A-levels.

SKILLS

Programming Skills: Proficient with *Matlab* and *R*.

Other Computer Skills: Proficient with *Microsoft Office* (including *Excel*), *AutoCAD*, *ANSYS* and *L^AT_EX*.

POSITIONS OF RESPONSIBILITY	<p>Christian Union President 2011–Present</p> <p>As elected Christian Union president, I was responsible for the running of a busy programme, ranging from small weekly events to occasional larger events (for example, a carol service). I managed a committee of nine other members, leading a weekly committee meeting where decisions were made about finances and events. Prior to this, I was publicity secretary for the Christian Union where I was responsible for designing posters and flyers and organising their distribution around the university campus.</p>
	<p>Head Boy of Boarding House (Ripon Grammar School) 2007–2008</p> <p>This involved representing the views of boarders to senior staff at the school and being the public face of the house by giving speeches and meeting parents and students at open days.</p>
INTERESTS	<p>My main interest is music which over the last six years has involved me running my own jazz band (which regularly plays gigs at competitions, weddings, balls and other functions), conducting an orchestra, providing piano accompaniment for a choir and playing saxophone in a big band. In the past I have also been involved in drama in both backstage and acting roles.</p>
REFERENCES	<p>Dr Leroy Gardner Reader in Structural Engineering Imperial College London leroy.gardner@imperial.ac.uk</p> <p>Dr Richard Ghail Lecturer in Engineering Geology Imperial College London r.ghail@imperial.ac.uk</p> <p>Further references available on request.</p>