



Design and Development Engineer (Aero & Hydrodynamics/ Structures)

Full Time, Permanent

Salary: £ Competitive

Location: Brighton, UK

Company background

Aerotrope is an established, independent engineering consultancy based in Brighton, UK.

We work on a diverse range of world-class projects spanning renewable energy, low-carbon vehicles and large-scale public artworks. Our clients include individuals, SME's and global corporations.

In renewable energy, we have a long track record in innovative wind and tidal turbine development as well as in airborne wind energy and PV systems. With low-carbon vehicles, we currently hold the ultimate speed records for sailing as lead designers of the SailRocket2 boat. We are active in the latest all-electric land/sea/air vehicles, UAV/UAS and HALE/HAPS applications. In public artworks, we work with major artists and architects to realise ground-breaking projects.

In support of developing designs, we use our workshop facility to build physical models, evaluate materials and assemble prototypes. We work closely with specialist fabricators and with our clients' own manufacturing facilities to ensure that our designs mesh effectively with the available materials and process technologies.

As a Design and Development Engineer, your creativity and resourcefulness in this technically demanding role will count on every project. This position reports to the Director.

We are looking for qualified Engineers who can bring their experience in problem-solving to our small, multi-disciplinary team and who thrive on seeing a project all the way through, from initial concept generation and detail design to fabrication and testing. If this is you, please send us your application for this position, highlighting your project experience to date as well as your qualifications and technical expertise.

Responsibilities

Our Design and Development engineers' activities are wide-ranging:

- You will communicate daily within our team as well as liaise directly with our clients' engineering teams and suppliers.
- You will develop and communicate designs, using hand-sketching and rapid CAD exploration.
- A central part of the job is the calculation of aerodynamics/hydrodynamics, stability/control and weight-efficient structures by hand (Excel, MATLAB), using FEA (Ansys) and CFD (NEWPAN, OpenFOAM) methods. We operate our own in-house parallel processing clusters for the more computationally intensive modelling.
- In collaboration with clients' engineers, you will develop stability and control strategies for machines and vehicles and also carry out dynamic modelling.



- You will produce detailed 3D CAD models and 2D drawings in SolidWorks, Rhino and Fusion360; you will also prepare 3D geometric models for input into fluid dynamic and structural analyses.
- You will design, analyse and optimize structures to industry codes, where applicable (e.g. IEC 61400-1 & -2, DNV-GL, CS-LUAS, Eurocodes) and problem-solve from conceptual through to detail design stages.
- You will have a high level of self-organisation in the execution of your work as well as being supported closely by colleagues and the Director.
- Your design summary reports, drawings and specifications will clearly communicate complex design processes and their decisive outcomes to our clients.
- You will organise, lead and carry out model making, prototyping and testing.
- An aspect of your work will include the site inspection of projects, as well as the planning, advising and inspection of manufacturing and fabrication processes.

Qualifications, Experience and Mind-set

- BSc or BEng or higher in a related subject e.g. Aeronautical/Mechanical/ Marine
- Project and team-working experience, gained within Industry or during academic training
- Fluent use of English at a professional level and the ability to communicate clearly in a confident way with colleagues and clients in a range of settings
- 1-4 years design engineering experience, gained in a related design/manufacturing environment or during MSc, MEng or PhD projects
- Sound knowledge of 2D and 3D CAD modelling, hand analysis and FEA/CFD methods
- Familiarity with failure modes analysis including FMEA, fault tree approaches etc.
- Practical design experience of low carbon vehicles technology, aerodynamics and/or weight efficient metallic and fibre reinforced composite structures
- Active interest in reducing the environmental impact of our energy generation and transportation activities

Further information

Especially reflecting our diverse project and technology base, we actively support the Continuing Professional Development of our team through training, in-house research, on-project learning and attendance at conferences.

We are an equal opportunity employer and value diversity at our company. We do not discriminate on the basis of race, religion, colour, national origin, gender, sexual orientation, age, marital status, or disability.

Benefits offered: Comprehensive company pension scheme, Cycle to Work scheme, Charitable Giving, childcare vouchers.

Tier 2 sponsorship is available when appropriate.

Application Process

For any clarifications please contact info@aerotrope.com.

Please send your CV and covering letter by 11th July 2022.

Interviews will take place in Brighton, UK when possible and otherwise by video calls.

No recruitment agencies, please.