Person specification – CFD Developer, Engineering

Education and experience

|  | Essential | Desirable |
| --- | --- | --- |
| MSc (with at least 5 years of experience) or PhD (with at least 2 years of experience) in Coastal or Hydraulic Engineering (or equivalent) | X |  |
| Professional qualification and/or membership eg. ICE or equivalent gained through professional experience. |  | X |
| Experience of working in either a consultancy or an engineering organisation ideally covering all aspects of engineering studies including modelling of hydraulic processes, planning and design of coastal structures |  | X |
| Have a strong background in either or all:  Multiphase flows such as segregated flows with interfaces and/or dispersed flows with particles.  Multiphysics and coupled simulations including partitioned simulation techniques.  Applied Mathematics (Solution of differential equations, linear algebra)  Software development skills relating to CFD models with emphasis on object oriented and parallel programming. Knowledge of programming in C++ within the OpenFOAM framework will be advantageous | X | X |
| Experience and evidence of staff line management |  | X |
| Able to interpret and analysis data | X |  |
| Experience of managing budgets and resources | X |  |
| Have a record of technical publications. A publication record in computational journals such as Journal of Computational Physics, Computers & Fluids and Computational Particle Mechanics is highly valued. | X |  |
| Have demonstrable understanding of key design issues of hydraulic, coastal and marine structures e.g.Hydraulic design of pumping stations, intake structures, drop shafts and open channel structures |  | X |
| Have a strong background in either or all: | X |  |
| Particle-laden flows with application to marine environments or related industries including   * + Dense sediment flows with complex rheology.   + Wave-particle-structure interactions (scour, erosion, sediment transport) and the relevant simulation techniques, such as resolved/unresolved simulations and CFD-DEM coupling. |  |  |
| Fluid/wave-structure interaction (FSI/WDI) with application to marine engineering or closely related industries including   * Wave interaction with coastal structures (wave loading, transmission, overtopping) * Wave interaction with fixed and floating structures, with an emphasis on marine renewables |  |  |

Personal characteristics

|  | Essential | Desirable |
| --- | --- | --- |
| Skilled in planning in the short and long term, and managing changing priorities | X |  |
| Ability to work independently, take the initiative, find solutions and proactively drive progress, while working as part of a team. | X |  |
| Good communications skills, written and verbal. | X |  |
| Ability to prioritise a demanding workload with multiple deadlines |  | X |
| Resilient, highly motivated, with the ability to stay calm under pressure |  | X |
| High levels of professional pride and attention to detail | X |  |
| Confident and articulate with the credibility to persuade and influence | X |  |
| Able to demonstrate leadership skills with a track record of critical thinking and problem solving abilities |  | X |