

# Design and Engineering

Engineering at its best



TEDDINGTON

# Engineering at its best

**Teddington Systems is a global leader in the design, development and manufacture of control systems, solutions and products for industry.**

We aim to be the key technical partner to our clients. From simple valves, switches and other control devices to complex system design, engineering and manufacture.

Our ability to deliver from concept through to production for a wide range of applications, with quality, and to time and budget, lies at the heart of what we do. Our product reliability gives you the peace of mind with solutions that you can truly 'fit and forget'.

Encompassing design, development and manufacturing, Teddington delivers by creating a true partnership with our customers, founded on collaborative working, honesty, openness and dedication.

## Our 5 Stage Approach

**Most developments start life without knowing everything that is needed in advance in order to complete the project. The reality is that, at some point during the development, you find:**

- initial requirements often need changing
- completely new features are introduced mid way through the development.

The trick is to introduce these completely normal 'side-effects' in a controlled way.

So, Teddington has created our own approach to development projects that is a combination of both 'Agile' and 'Spiral' development methodologies. From experience, this enables us to develop products:

- Faster
- At lower cost
- At lower risk
- With total transparency to our customers

Crucially, the 5 Stage process provides the ability for our customers to perform reviews of the project's business case at each critical decision making stage.

### Stage 1

#### Project launch

- Seeking clarity of the project scope
- Identification of risks and the plans to reduce them

### Stage 2

#### Evaluation

- Breadboards or development systems
- De-risking of core functionality
- Gaining confidence in the architecture and design

## Agile Light

Lightweight gathering of initial requirement to allow concentration of the key aspects, risks and technical goals that are the key to the success of the project.

# Hardware design and development

At Teddington, we are fortunate to have a dedicated team of experienced and skilled engineers that can offer a range of hardware design services to meet your needs.

Using state-of-the-art tools and software, we pride ourselves on designing innovative and effective electronic hardware solutions. Our design strategy combines tried and tested technology with the best of the latest techniques.

With the aid of our 5-stage development process, we are able to take projects from the initial conceptual idea, step by step all the way through to market launch. We take pride in working closely with our clients, keeping you fully informed and involved at each stage of the development journey.

Our in-house manufacturing capability is also able to support products throughout the life cycle and beyond. The addition of design engineers, on hand to support products post-production is an additional strength from which all our clients benefit.

## We offer the following hardware design services:

- Analogue and digital electronic design
- CAD schematic layout and multilayer PCB design
- Embedded systems design
- Connector and loom design
- Bespoke product enclosure design
- BOM and Kit product management
- Mechanical product design

# Software and Firmware development

Teddington offers first-rate software and firmware design services built on the experience and programming skills of our software engineers, utilising the latest software development techniques and platforms.

We understand the trade-off between quality and efficiency when creating embedded code (firmware) at Teddington. We are able to strike that all important balance between the two.

We use the latest Integrated Development Environment's (IDE's), compilers and configuration management tools to produce efficient memory footprints, while adopting sensible coding guidelines to ensure code form and function is written with the highest integrity.

## We offer the following software and firmware design services:

- State Machine and RTOS firmware design
- Fully documented ASM & C code development
- In-house coding and documented standards
- Legacy code conversion
- Fully documented Net code development
- Android and iOS app development and deployment

## Stage 3

### Functional prototype

- Proof of core functionality
- Design is pulled together

## Stage 4

### Representative prototype

- Finalisation of design
- Client approval
- Design for manufacture and design for test processes

## Stage 5

### Pre-production sample

- Final version of the design prior to manufacturing
- 'Gold sample' for customer approval

## Agile

## 'Spiral'

Building on the foundational work and embracing the fact that things can change. Sprint based development approach to gather feedback as quickly as possible.

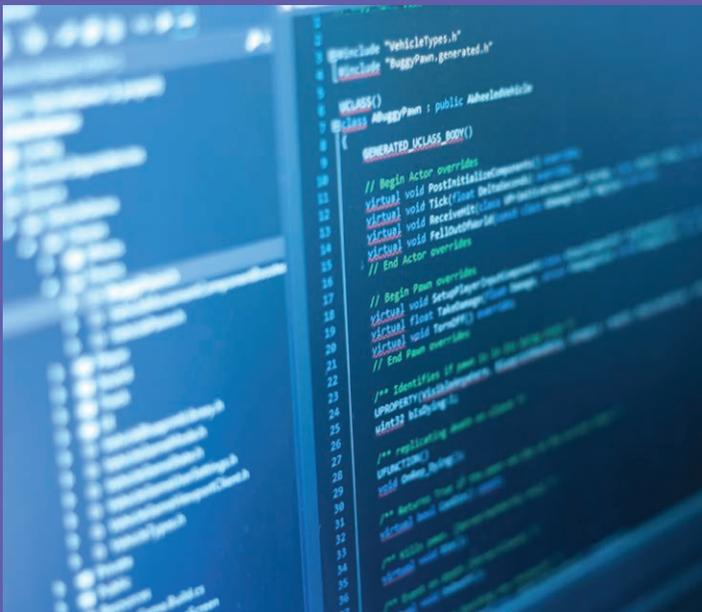
Structured iterative approach to complete the project.

# IRISmodular

Technology moves quickly and our customers must also keep pace to maintain their competitive advantage. Consequently, as development engineers, we must be able to move quickly at the same time.

Becoming a technical partner with Teddington gives you access to our in-house modular development platform called IRISmodular.

IRISmodular allows you to compete with companies with far larger engineering resources while tapping into an extensive and proven experience pool.



As a result, the benefits to our customers are significant:

## Faster to market

- IRISmodular uses a modular approach, enabling rapid integration of technology modules, many of which may exist already, leaving just the remaining hardware and software to be developed.

## Minimised risk

- As many of the IRISmodular features have already been deployed in a number of different environments, the development risk is minimised.

## Reduced costs

- In many cases the majority of the development needed has already been completed by us in previous projects, thereby reducing your development outlay considerably.
- Your development may well be able to re-use existing IRISmodular components enabling you to benefit from high volume prices without having to place high volume orders.

## IRISpower



Generic power modules connect your external power to the IRIScore

## IRIScore



Centralised generic processor core is the heart of the IRISmodular system

## IRISconnect



Modules that connect your IRIScore to the real world

Fully Interchangeable between all IRISmodular products

Customer interface



# Babcock Canada



**“Long term reliability is absolutely crucial and it was important that we chose a partner who we could trust to deliver. Teddington’s solution and the use of their IRISmodular methodology has ensured a robust system that meets our full requirements without the need for regular or ongoing maintenance.”**

Phil Davidson, Integrated Logistics and Supply Chain Director,  
Babcock Canada

Teddington have worked with Babcock Canada to develop new control systems to support the Canadian Navy. By understanding the constraints of legacy systems and being able to introduce innovative ideas into the development process, we are able to support complex systems for many years to come.

## Situation

Babcock Canada approached Teddington to upgrade the control panels that operate key systems on several of the naval platforms they support.

## Solution

Using its unique IRISmodular technology, Teddington was able to completely overhaul the internal architecture of the fleet’s existing System 5 panels.

## Benefits

Using IRISmodular solved obsolescence issues and, from an operational perspective, ensured the panels’ functionality and physical features remained exactly the same.



# Kensa Heat Pumps



**“Teddington listened to our key objectives and kept us fully informed at every stage of the development process, allowing us to work in partnership to create a solution that was to our exact requirements.”**

James Standley, Operations Director, Kensa Heat Pumps

Teddington have worked with Kensa throughout the development of their new Evo range of heat pumps. A strong collaboration was established to develop and refine the requirements, design, create and prove the prototype systems and then progress through the design for manufacture stage resulting in a truly state of the art system.

## Situation

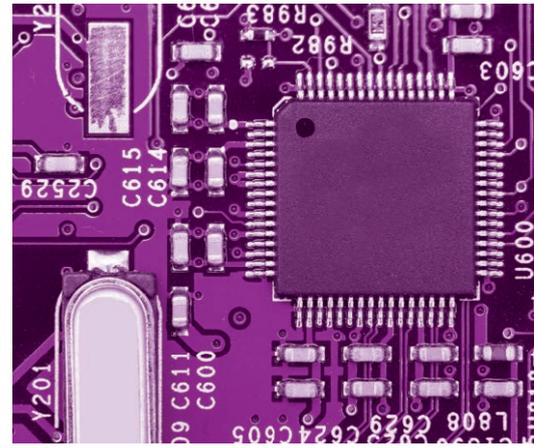
Kensa asked Teddington to develop and engineer a touch screen control system for its new Evo series of heat pumps.

## Solution

Teddington’s 5 Stage development process allowed engineers to work in close partnership with Kensa, developing a bespoke solution that fully met the specification.

## Benefits

The proactive system pre-empts system irregularities, enabling better diagnostic and faster system resolution, reducing costs and potential call outs.



JOSCAR REGISTERED



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