



We Design



We Specialise



We Integrate



We Install



We Bot



We Manage

# Case Study

## Automation and Robotics

### Introduction

For the past 20 years the Inspec team, ranging from Chartered to post graduate engineers, have demonstrated a wide range of systems integration capabilities.

Our team has advanced alongside technology keeping up to date with the state-of-the-art developments from manufacturers such as Siemens, Allen Bradley, Mitsubishi, and more.

With a track record for providing bespoke solutions, capable of integrating robotics to further augment new and developing manufacturing methods, if we haven't done it yet, it wont take us long to pick up the necessary skills.

As more of an amalgamation of various projects, this case study outlines our successes over the years.

### Automation

Notable projects over the years have included:

- Effluent treatment
- Bulk liquids storage
- Pharmaceuticals production
- High speed, high volume, bakery machinery

**Quality:** All our automation projects follow a prescribed quality model, generally covering:

- Specification
- Module Development
- Module Testing
- FAT
- SAT
- Commissioning





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**Systems and Platforms:** Our experience with programming covers a wide range of manufacturers, including:

- Siemens
- Mitsubishi
- Allen Bradley
- Festo
- Omron



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**Communications:** Exchanging data between systems requires multiple protocols especially when bridging between manufacturers:

- Profibus
- Profinet
- Modbus (TCP and RTU)
- Asibus
- DH+
- DF1
- OPC



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**Languages:** Whilst the majority of Clients specify ladder logic for ease of maintenance, we are versant in more complex languages such as:

- STL and SCL
- Visual Basic and Java



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## Robotics

Integrating a robot into an existing work stream can payback huge dividends especially when taking on dull, dirty, dangerous, or repetitive, tasks. This can free up key personnel to be able to tackle more complex problems and add more value to a business.

Robots tend to come in two flavours, traditional robots for heavy duty tasks, and more recently cobots have entered the fray.

A cobot is a collaborative robot, intended to work alongside people in a shared workspace.

As a demonstration, learning, and deployment tool we have invested in our own cobot which we have already developed to deliver a range of potential solutions, such as:

- Palletising
- Pick and place
- Visual recognition and sorting including text identification
- Conveyor systems and conveyor tracking

Through integrating the cobot with a PLC and HMI based control system we have been able to significantly increase the range of solutions that can be delivered through cobots. The possibilities are endless and include:

- Milling of materials
- Welding and soldering
- 3D printing
- Sanding and finishing

Of course each project is unique requiring a bespoke solution, with off the shelf products unlikely to tick all the boxes; this is where we can step in and help you realise your vision.

Robots and cobots can be implemented into any work stream, from SME manufacturing workshops, to blue chip multimillion pound production factories, not to mention laboratories and test facilities.

With a typical payback of 1 to 2 years the investment is soon turned into profit.





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### Conclusion

Achieving a solution incorporating automation and robotics is not always straightforward, but utilising technical knowledge and understanding, alongside the application of previous experience, we can achieve the desired outcome as we have regularly demonstrated.



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### What Next?

With over 20 years of experience, Inspec Systems have the knowledge and competency to deliver projects to your requirements.

From specification and detailed design, to installation and commissioning, Inspec Systems can deliver your projects to specification, on time, and within budget.

Why not give us a call and speak to our team, to see how we can help you on your journey to realising your projects.



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### Contact Us

From concept to completion or at any stage we have the skills, capability, judgement and drive to support your projects.

Call us now to find out what we've been up to and how you can take benefit from our lessons learned over the past 20 years.



### Contact Us

Tel: 01482 898 080

Email: [info@inspecsystems.co.uk](mailto:info@inspecsystems.co.uk)

Web: [www.inspecsystems.co.uk](http://www.inspecsystems.co.uk)

Inspec Systems Limited  
1st Floor Sidings House  
Sidings Business Park  
Freightliner Road  
Hull