

### Glazing Vision

#### A Window on Firmware Development

Glazing Vision provides a variety of architectural glass rooflights and bespoke window solutions to suit an equally diverse range of residential dwellings and commercial properties. Because of their focus on design to maximise natural lighting, their products are in use within period terraced housing as well as luxurious, multi-million-pound homes.

Over a twenty-year period, Glazing Vision has developed a skillset to deliver the complete rooflight offering. This includes a through life approach that incorporates design, manufacture, installation and ongoing maintenance.



### The Challenge

Over the past few years the now global company has been working towards the vision of replacing the currently used four different controllers with one configurable electronic controller for all Rooflight products. The aim being to reduce both the overhead costs and the complexity of manufacture and product support.

Several challenges occurred at the same time. Glazing Vision's main design engineer left the company; the new controller had been introduced into two Rooflights however they identified improvements required to the firmware code; and they needed further development to roll out the new controller across the remaining types of Rooflights. The need to achieve this in a short time span with the reduction of in-house resource, led Glazing Vision to the point of needing external help.



### The BitBox Approach

BitBox's approach clearly impressed Glazing Vision. The primary contact at Glazing Vision for the project is Electrical and Electronics Department Manager, Michael Murphy. Of working with BitBox he said:



"Throughout the whole process BitBox had been very co-operative and responsive to all our requests and questions. In particular, the developers were very easy to work with and both demonstrated expert knowledge in their subject matter which was very re-assuring."



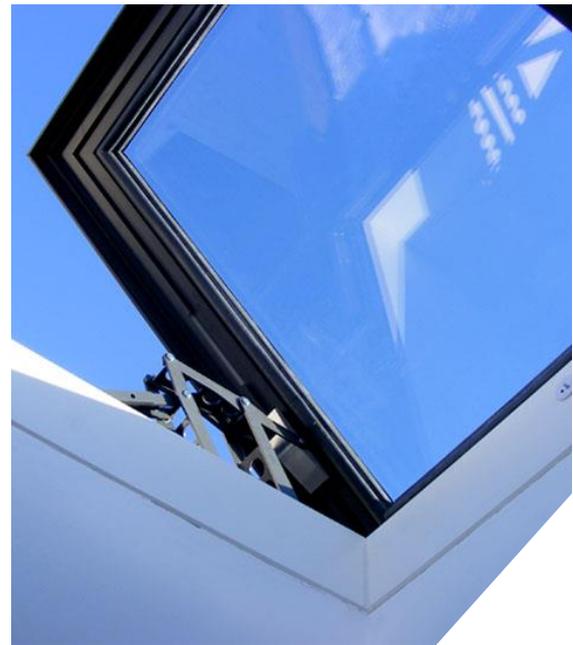
Peter [Software Engineering Manager at BitBox] kept us up to date with all development on a weekly basis and on several occasions went above and beyond what was expected within the agreed contract to ensure we received a product fit for purpose. BitBox not only give the appearance of a professional company but deliver upon it too.”

Following a review of the existing application and developing an understanding of the future expectations of the product, BitBox delivered firmware code over 2 phases.

After assessing the firmware code BitBox decided to completely re-write it, providing a much more stable platform. Testament to the effectiveness of this collaboration, Michael Murphy said: “Any issues we were experiencing have now been rectified.”

In addition to developing a more stable system, BitBox provided backwards compatibility with the company’s proprietary communications protocol and at the same time implemented the Modbus communications protocol for future code releases.

BitBox updated Glazing Vision’s Configuration Application (developed in python) which is used to program and monitor the controller. The Config App is now capable of using both communication protocols and is much more responsive and configurable.



## Results

The redeveloped platform has allowed Glazing Vision to consider enhancements that will make the controller useful for new projects. For example, BitBox has expanded the motor control algorithm to encompass all types of Rooflight mechanisms/actuators, the auxiliary input/output connectivity has been improved ensuring a more flexible approach to how they were configured/assigned and the BitBox firmware engineers also delivered a more flexible fire control algorithm allowing priority over the standard fire input connection. Our developers worked closely with the electronics department at Glazing Vision to improve the sensitivity and accuracy of the analogue to digital temperature input reading.



“Glazing Vision has a good working relationship and expect BitBox to further develop code on our behalf. BitBox is certainly a company we want to conduct business with in the future.”