



## KINCAPLE - BOQUHAN

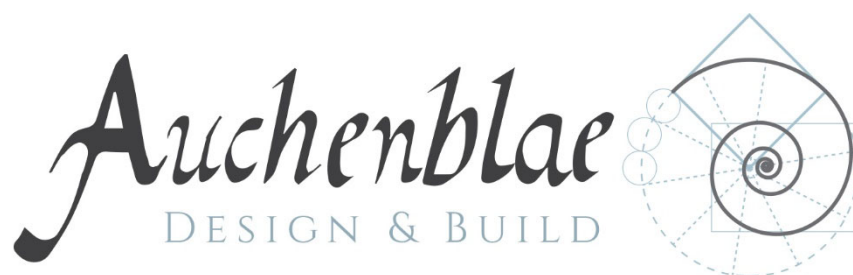
### Project Description

*'Planning Permission to demolish existing Dorran constructed dwelling house, split the large plot into two smaller plots and build one 1.5 Storey Dwelling Houses to each plot.'*

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Architectural Design : Project Management : Full Build Services

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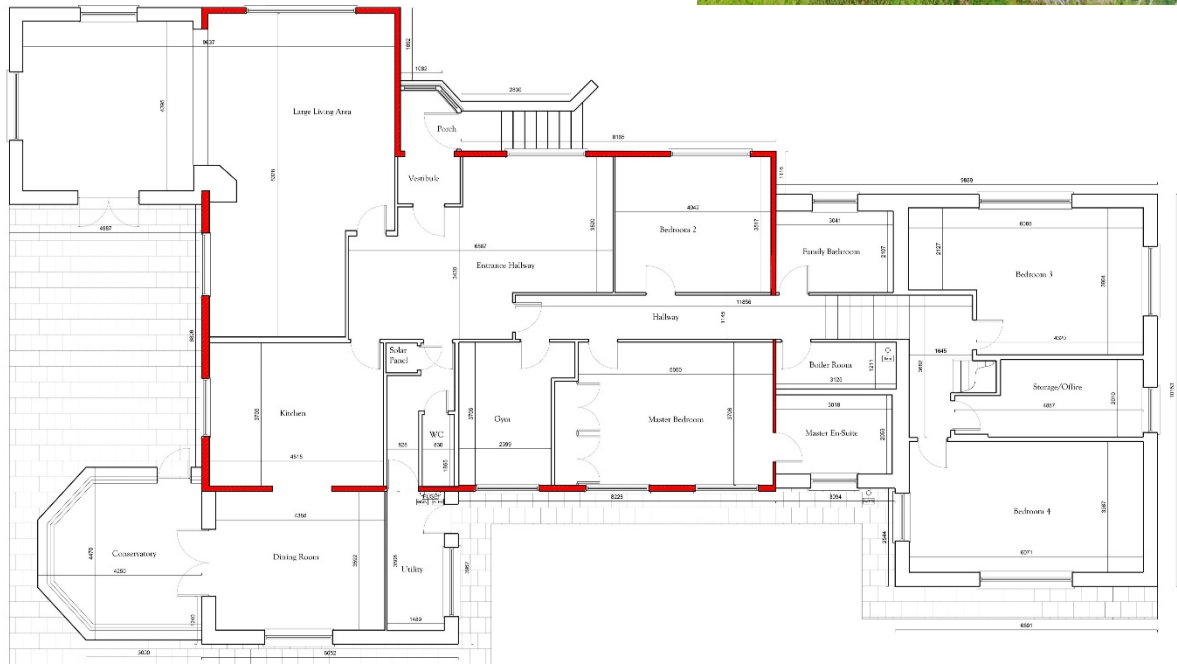


Figure 1 - The red line here indicates the extent of the substandard Dorrans construction

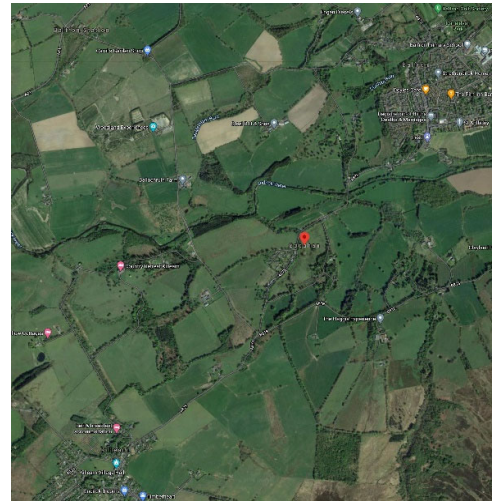
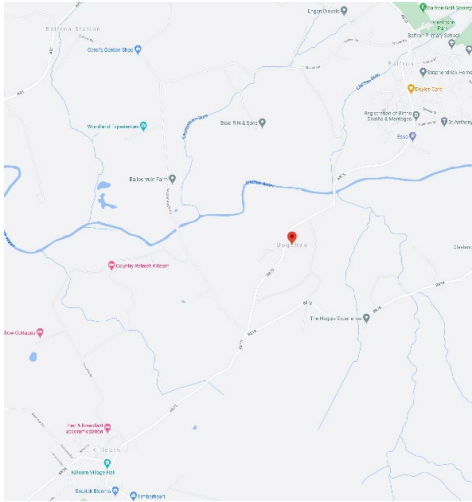
## Introduction:

Kincapple is set at the end of the small hamlet called West Boquhan, which sits just outside of Balfroon, Stirlingshire and it takes in the stunning views of the surrounding area. Set at the foot of the Campsie Hills and looking out to Ben Lomond, this plot of land enjoys almost 360 degrees of beautiful countryside.

The existing property itself, has a core construction of Dorrans and includes several, now substandard, extensions over the years, that have added further living accommodation and a large double garage. The Dorrans is not suitable to modern living standards and has been termed defective under the 1984 Scottish Housing Act, to this effect and after many discussions on site with structural engineers and designers, it has been concluded that the structure is better replaced with new more efficient buildings, that suit family life. Please see the last two pages of this document for the Dorrans information.

After going through the advised pre application process, we have taken on board all points and legislation that were highlighted, to propose this final design. The sole purpose of this design is to create two family homes, with minimal impact on the landscape and to create sustainable living, adhering to the Local Development plan, Housing in the Countryside and 'Low and Zero Carbon Buildings', where we endeavour to align with environmental legislation. These homes will be suitable for family life and will also be congruous with accessible purposes too, to widen the scope of people who can live comfortably in this beautiful landscape.

## Location and Context:

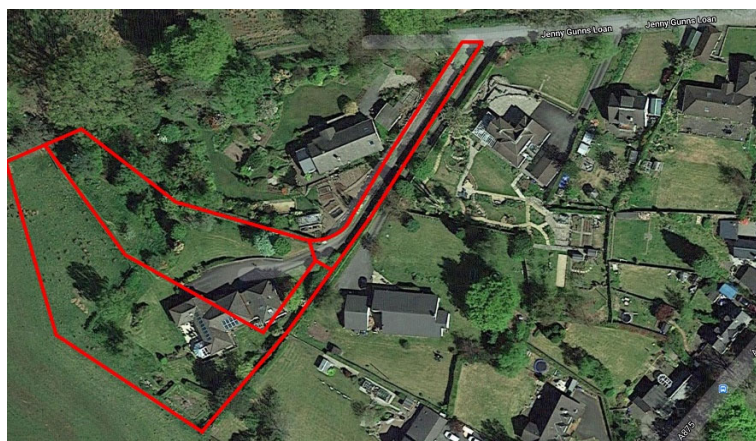


Kincauld is set within the designated countryside area of Stirlingshire and sits between two large towns, Balfour and Killearn. Boquhan itself is a collection of mid to late 20<sup>th</sup> century and mid-21<sup>st</sup> century buildings, mostly white lime or concrete render and slate or concrete tiled roofs.

There are many farms surrounding the plot plus a hamlet of dwellings with a traditional Scottish aesthetic and a variety of different sized/shaped garden plots surrounding each. The images below show the plot as it is currently and how the land will be sectioned off to create two large plots, still in keeping with the surrounding plot sizes and form.



Existing Plot Outline



Proposed Plot Outlines

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## Planning Policies:

It has been considered that these following policies will be most relevant to this application.

We have consulted the supplementary guidance 'Housing in the Countryside' for the following policies:

### Policy 2.10: Housing in the Countryside

- (i) *When they are within or closely and cohesively visually related to existing Building Groups and Clusters;*

It has been carefully considered by Mr & Mrs Pooley, to adhere as closely as possible to the local building type design and to limit the overall impact of the proposed dwellings, to the site and surrounding countryside. The house type they have chosen has both a low profile, being no more than 1.5 storeys and material choice that is entirely sympathetic to the existing hamlet. The plot sizes and shape also adhere to the neighbouring properties, in that they do not deviate from a large garden plot and, in most cases, a 1.5 storey dwelling house.

### Policy 3.2: Site Drainage

#### (a) Foul Drainage

- (ii) *In other settlements (population equivalents less than 2,000) where there is no, or a limited collection system, a private system may be permitted where it does not have a detrimental effect on the natural environment, surrounding uses or local amenity. A discharge to land (i.e. a full soakaway or raised mound soakaway) compatible with the Scottish Building Standards Agency Technical Handbooks should be explored prior to considering a discharge to surface waters.*

A full civil engineer's design and specification has been developed for both plots, utilising an existing septic tank for plot 2 and a treatment plant for plot 1 - full specification can be made available on request.

#### (b) Surface Water Drainage

- (i) *Surface water from new development shall be treated by a Sustainable Drainage System (SuDS) before it is discharged into the water environment, in accordance with the CIRIA 753 document 'The Suds Manual' and, where the scheme is to be adopted by Scottish Water, the Sewers for Scotland Manual Third Edition. Developments should be designed to conserve water usage and control surface water at source wherever possible. Opportunities to retrofit SuDS are encouraged.*

- (ii) *All proposed developments that include roads should be designed in accordance with the SuDS for Roads Manual (2010), published by the Society of Chief Officers of Transportation in Scotland.*

- (i) *Taking account of the location, scale and type of development, planning applications may require to be submitted with a drainage strategy in accordance with Scottish Government Planning Advice Note 61 - Planning and Sustainable Urban Drainage Systems (paras. 23 and 24).*

Again, the civil engineering design and specification will cover all aspects of surface water management, including natural surface water management systems to each plot - full specification can be made available on request.

### Policy 4.1: Low and Zero Carbon Buildings

- (a) *All new buildings must be designed so that at least 15% of the carbon dioxide emissions reduction standard set by Scottish Building Standards\* is met by the installation and operation of low and zero-carbon generating technologies. This percentage will increase to 20%\* in 2019.*

The proposal will include solar panels to each dwelling house roof to plots 1 & 2, plus plot 1 proposing to install an air source heat pump, in addition to solar panels.

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## Design:

The demolition proposed, will remove the entire Dorran with extensions dwelling from the site, as none of the structure is suitable to reuse, under current building standard requirements. The removal of this building and hardstanding, will create a large garden area that will separate both plots with an agreeable level of privacy to each site. The proposed properties will be constructed around the existing dwelling, which will be demolished carefully and under the full guidance of a structural engineer post completed works to each proposed bungalow.

It is important again to state here that the Dorran construction is totally unsuitable for modern standards of living and has been termed defective under the 1984 Scottish Housing Act, with poor 'U' Values @ 0.68 W/m<sup>2</sup>K created with inadequate materials. The proposed properties will achieve a higher standard of efficiency both at an energy capacity and within the surface water management plan, as every effort will be made, budget withstanding, to ensure these properties leave as small a carbon footprint as possible.

The plot as it stands is roughly 4700 square meters total, the existing built-up footprint stands at 372 m<sup>2</sup> (including lodge), this will be slightly increased to 400 m<sup>2</sup> for both bungalows, in addition to this there will be 681 m<sup>2</sup> hardstanding, not including the permeable road surface, all of which will receive responsible surface water drainage considerations under the strict guidance of an already agreed contract with an experienced civil engineer.

The new builds will be as close to the existing footprint of the proposed demolitions, as possible and aesthetics will sympathetically fit in with local building types. The large areas of glazing, required to make the most of the stunning views, will be none reflective, to limit glare, in the hope to allow the building to sink further into the background. To further support our connection to the land, we will be implementing a natural surface water system from both properties, where the water will be directed to an area of the garden designed to form an approved SUDS format, to benefit local flora and fauna.

The inspiration for the properties arises from these images below, where we feel the design is sympathetic to the surrounding building types within the Boquhan hamlet, by having a low profile and similar material choice.



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## Supporting Information:

A full Civil Engineering Survey and Design has been carried out on site with a confirmation email, please see the supporting document, from SEPA approving the plans, as proposed. The full design package can be made available on request.

It is prudent here to show the works that have been carried out to the junction onto Jenny Gunns Loan, from the A875 and to quote the below message from Sarah McGuire, Planning Officer.

*“Apologies for the delay in this, however I can confirm that Condition 6 & 7 of planning permission 21/00024/FUL have been fulfilled and therefore can be discharged.  
Additionally, the process for refuse collection has been detailed on site and as such, condition 8 is no longer required to be fulfilled.”*

The following images have been confirmed as satisfactory, after a site visit from the Transport Team and this is also outlined in a message from Stephen Spiers, Transport Development Control Officer to Sarah McGuire.

*“I’ve undertaken my site visit today and met with the applicant, Daniel, to review the works undertaken.*

*I can confirm that I have no objection to the discharging of conditions no.6 & no.7 of planning permission 21/00024/FUL, as the works to the junction have been undertaken in full and requirements for the maintenance of the visibility splays have been agreed, with adequate visibility formed on site.*

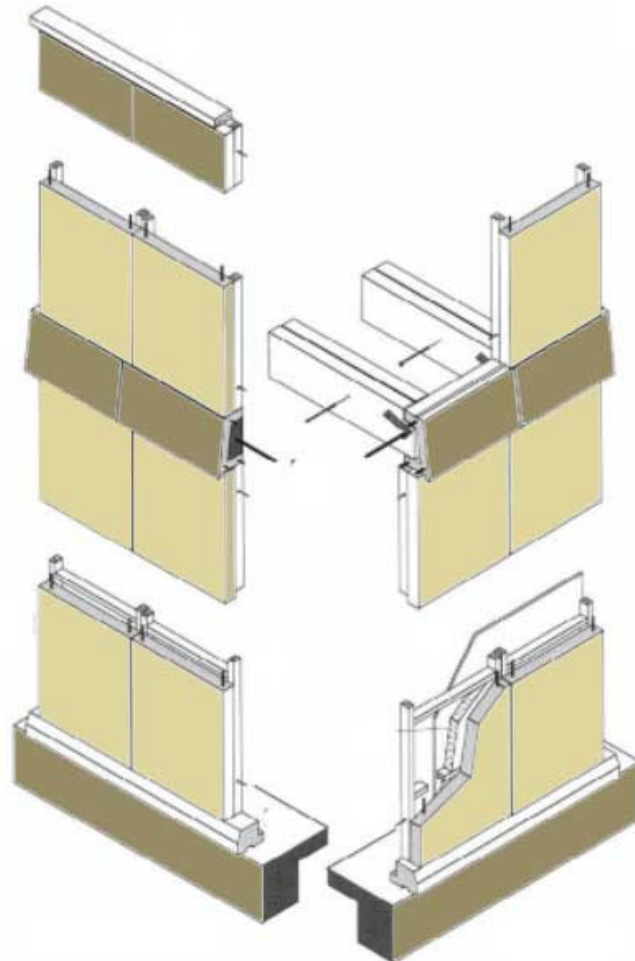
*In addition, I have received correspondence relating to the process undertaken for refuse collection along the private road, which establishes that bins are not presented at the public roadside for collection. As such, condition no.8 of the permissions is considered no longer required / fulfilled, and I can confirm we would have no objection to this being removed or discharged as appropriate.”*

This evidence and the comprehensive collaboration with the Transport Team and Mr Pooley to achieve the relevant measures to ensure the junction is safe, demonstrates compliance and the willingness to carry out any works required to upgrade the junction for safety to all users.



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Below is information about the Dorrان Construction methods and material use, its defective nature and why it would not make environmental or economic sense to retain and renovate the current dwelling house.



*Diagram of Dorrان Construction*

***Text taken from Mark Chalmers blog about Dorrان Construction***

- Dorrان houses are like Structural Insulated Panel Systems or SIPS houses, but pretty much without the “I”. The Dorrان system consists of storey height precast panels which are 16 inches wide, which seems an odd width for a structural module, but we now live in a world which has the luxury of setting out in metric, usually on multiples and fractions of 3000mm. Whether Dorrان licensed the system from Tarran, or the company was a direct subsidiary, isn’t obvious – but during the 1950’s, they sold to the public sector with houses for the Forestry Commission in outlying parts of the Highlands, small developments of social housing in rural counties like Argyll and Caithness, and even domestic accommodation at RAF Saxa Vord on Shetland.
- Dorrان Construction later offered a range of bungalows to private buyers; the houses had couthy names like The Glen Shean, The Glen Varloch, The Glen Frugart and The Glen Clova. By the 1960’s they fabricated around 10 houses each week at their precast factory in Perth, and a total of 2500 had been erected by 1962.
- According to the Building Research Establishment report, two storey Dorrans have a characteristic protruding band at first floor level, like a string course, formed by a precast ring beam. Timber floor panels were strapped to the ring beam with joist straps, and the precast panels were tied together using steel bolts.



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Some Dorrans appear to have a concrete ring beam at ground level, too. For vapour control, the concrete panels were lined with 2ply bituminous felt as a dampproof membrane. When the wall was erected, the joints were filled with gunned bitumen, then pointed up in cement mortar. Interestingly, a newspaper article from the 1960's notes that one of their outstanding features was the level of insulation in the walls and ceilings. A half inch thick internal layer of expanded polystyrene sat between the concrete panel and its plasterboard lining ... half an inch, which is better than nothing. By the 1970's there was disquiet about nontraditional methods of construction, and two of the Dorrans' failings were shared by several other systems. The panels' lack of proper insulation led to condensation problems, and serious corrosion of the steel ties between the panels which were a byproduct of it. The BRE identified the problems during the early 1980's, which eventually led the designs to be designated under the Housing Defects Act 1984, which effectively condemned them and made them unmortgageable. However, the 1984 Act was consolidated into the 1985 Housing Act, which provided grant assistance for people who had unwittingly bought former council houses constructed using problematic systems. Perhaps if the Dorrans system had been constructed using stainless steel fixings, and with effective insulation, the houses might have succeeded. As it is, the remedial works entailed in fixing them range from adding a masonry skin outside the precast panels, to propping the roof then demolishing the panels and building a brand new external wall. Instead, many chose to demolish the existing house and build a timber kit on the site instead.

While it's true that we probably won't make exactly the same mistakes again in future, we may make slightly different mistakes in pursuit of the same goals. A few years ago, I worked on a project with some of the first zero energy houses in Scotland, built using a SIP system comprising JJI joists skinned with OSB board, and a cavity filled with injected cellulose fibre. There were no insulation or corrosion issues that I'm aware of – but the high degree of airtightness meant that when tenants switched off the whole house ventilation system (because they were concerned about running costs) they suffered from condensation problems in kitchens and bathrooms. A different kind of prefabrication, a new type of problem, caused partly by a novel approach to design and more so due to poor communication between the landlord and tenant about how the house worked. The other lesson of Dorrans Construction Ltd. lies in how we may try to meet today's unmet demand for housing by using offsite construction, which is the new, untainted name for system building, aka prefabrication. In the early 1960's, Dorrans looked southwards and after 1964 during which it made a profit of £96,000, the firm opened a precast factory in Consett and another in London. By 1967 it had built 4000 houses across Scotland, but by signing up to fixed price contracts in England during an era of rampant inflation, Dorrans committed its fatal mistake.

- The company lost money on its English contracts, the factories in Consett and London closed, and the parent firm in Perth struggled to survive. By the time that Dorrans Houses began displaying the first symptoms of structural corrosion, the firm was no longer producing them – and the postwar housing boom was over. As demand slackened, the industry pulled back from mass produced housing. “House factories”, the dream of technocrats and Le Corbusier alike, are much trickier to achieve in practice than you might think. Dorrans Houses have been condemned, both literally and metaphorically, as a failed experiment in mass production. After the 1984 Act, mortgage lenders viewed precast panel houses as “Nontraditional” and as far as many buyers were concerned, that euphemism was the kiss of death. Now, we're burdened with the legacy of the past when cheap housing was constructed at breakneck speed to replace overcrowded slums; consequently we ended up with a modern version of the same.