# BEST PRACTICE GUIDES

## SECTION 1 FOUNDATIONS







### BEST PRACTICE GUIDES

Our series of Best Practice Guides will take you through what the Pride in the Job judges look for at each stage of construction and when considering the site manager's overall organisation and management skills.

The Pride in the Job marking sheet used by our judges has 44 marking lines split across 9 sections. The judges will give a score for each line - where there is no work to mark, that line will be left blank and no mark given. A mark of 4 indicates compliance with NHBC Standards and with Building Regulations. A mark of 5 indicates extra attention to detail over and above compliance standards. A mark of 6 would indicate that much of what the judges have seen cannot be improved upon. A mark less than 4 would indicate varying issues relating to workmanship and non-compliance with NHBC's Standards - the greater the issue or number of the same issue, the lower the mark. The final score will be all the marks awarded expressed as a percentage.

These Guides set out what the judges are looking for with clear hints and tips on the sort of practice that will lead to higher marks.

Clearly it is impossible in these short guides to cover every single point of construction - we try here to cover the main issues that are taken into account when considering a mark for each score line.

When looking at the photographs, consider each on in the context of the score line heading - don't be distracted by something else that isn't as good - that will be marked accordingly elsewhere.

### SECTION 1 FOUNDATIONS

Ensuring the foundations to a new home are sturdy enough to transmit the loading safely to the ground is essential to the long term durability of the home. This section examines the three main aspects of this work.

GROUND PREPARATION, EXCAVATIONS & PILING

REINFORCEMENT, FORMWORK AND CONCRETE PLACEMENT























### **SECTION 1 - FOUNDATIONS - NOTES**

### **GROUND PREPARATION, EXCAVATIONS & PILING**

**Images 1, 2, 3, 4 and 5:** The judges will want to see evidence that the site manager understands what preparation works are required and that the site is set up so that groundworks contractors can operate effectively and efficiently. In particular, they'll look at:

- Have the plot areas been suitably prepared?
- Notice trees in the background is the subsoil on this development susceptible to clay shrinkage and have suitable precautions been taken?
- Notice the spoil tips does this contain demolition spoil and if so does it contain any unsuitable material? How is it being managed?
- Is quality and care taken with the storage of removed soil, especially if it is to be used for gardens later.
- Are any de-watering procedures in place?
- Has soil remediation, if required, been done in a correct, environmentally responsible manner?
- Is the site kept as tidy as possible during groundworks operations? The judges know it can be a mucky, muddy business but extra marks are available for clear efforts to control these issues.

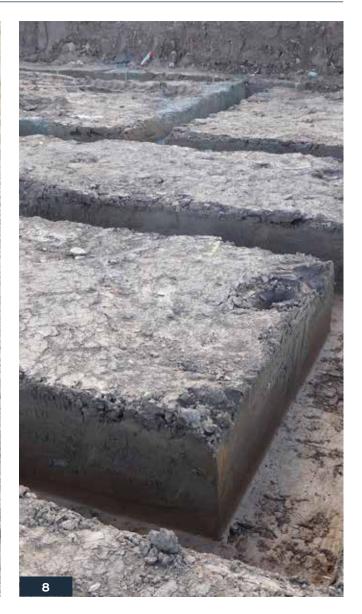
Images 1-5 show ground preparation that has been carried out generally to good effect on sites that are clearly kept tidy and safe. Image 5 shows a very well organised site with a good sequence of works that prevents the garden areas being used for ad hoc traffic, which would compact the sub soils and create a strong potential for waterlogged gardens.































### **SECTION 1 - FOUNDATIONS - NOTES**

### **GROUND PREPARATION, EXCAVATIONS & PILING - CONTINUED**

**Images 6, 7 and 8:** Foundations come in many forms - strips, trench fill, beams, piles of varying types, pads, rafts and more modern forms such as insu-slabs for more unstable ground.

All foundations require some form of **excavation** and judges will pay close attention to:

- quality in the formation and verticality of the sides
- correct depths, especially where there may be tree influence as per NHBC Standards Chapter 4.2
- clean bottoms prior to concrete pour perhaps image 6 could be cleaner for example
   as demonstrated in image 8.
- accurate step formations
- neat and effective placement of heave precautions both with strip and in preparation for reinforced beam work, all with consideration for adjacent foundations.

In relation to **piling** which is usually carried out by specialist contractors, the process still has to be overseen effectively by the site management team. Judges will look at:

- the quality and accuracy of the visible piling work image 8 for example shows perfect alignment of the stone vibro columns.
- the installation logs and test results
- basic good practice such as trimmed pile heads penetrating a minimum of 50mm into the beam plus adequate visible penetration of reinforcement bars into the beams.

With all foundations, but especially specialist foundation systems, remember to consider the influence of drainage and other service trenches on the stability of the completed works.

**Images 9, 10, 11 and 12: Formwork** comes in many forms but is now mostly of the flexible 'Pecafil' type where accurate setting out, alignment and support are required to achieve the best standards possible in the finished beam. Images 9-12 show where this has been achieved and would be gaining scores above the '4' compliance level. Image 12 shows good use of plastic spacers to ensure the correct concrete cover to the reinforcement. This would be marked well under the next section Reinforcement, formwork and concrete placement.

**Images 13 and 14:** These show the alignment of the formwork where the support prior to concrete pour could have been better. They will probably both be deemed to be compliant

as the substructure wall is generally sitting on the centre-line but the formation of these beams and the support to the formwork prior to the concrete pour does not demonstrate the same level of Pride as seen in images 9-12.		





### REINFORCEMENT, FORMWORK AND CONCRETE PLACEMENT











### REINFORCEMENT, FORMWORK AND CONCRETE PLACEMENT













### **SECTION 1 - FOUNDATIONS - NOTES**

### REINFORCEMENT, FORMWORK AND CONCRETE PLACEMENT

Images 15, 16 and 17: The judges will be checking that reinforcement is of the correct size and position with attention to detail at junctions, tie beams and at pile connections. They will look at the detailing around spacers to the formwork and at the sides and the bottom of beams to ensure adequate concrete coverage. Evidence in the finished beam will indicate the correct mix of concrete and if it was properly poker vibrated and finished to a smooth level finish.

The judges will look for consistent high quality across all beams observed, both in terms of alignment and finish. The concrete should have been placed in the excavation by shute, skip or pump with minimum overspill evident to achieve higher marks. Note the alternative method used in image 15 to ensure great alignment of the formwork which has resulted in the quality of finish seen in image 16. Achieving this, plus accurate setting out, allows for accuracy of wall placement down the centre-line of the beam as shown in image 17.

Images 18, 19, 20 and 21: With Concrete Placement the aim is to achieve as neat and level a surface as possible for the following substructure brick trades. The amount of concrete overspill will be an indicator of the techniques employed for placing the concrete. On images 19, 20 and 21, the amount of overspill might just lose a mark - certainly the workmanship is not quite as clean and sharp as image 18.





### **GOOD LUCK!**

We hope you have found this best practice guide useful in gaining a better understanding of what the judges are looking for at each stage of construction.

Remember, the six characteristics the judges are looking for in a site manager are:

- consistency
- attention to detail
- technical expertise

- leadership
- interpretation
- health and safety.

We wish you all the very best in the Pride in the Job competition as you strive either for your very first win or to repeat or improve on your performance in previous years.



