

# 1 : 10000 Mapping Workshop



# Content

These guidance notes have been prepared to supplement the recent workshops presented by the Senior Plans Advisors.

It provides information relating to:-

- The Joint Mapping Forum
- Types of Landscapes surveyed at 1:10,000
- Potential Ordnance Survey (OS) 1:10,000 upgrade
- OS survey specifications
- OS map examples
- Deed Plan examples
- Digital data
- General guidelines

# Joint Mapping Forum

## Stakeholders



A Joint Mapping Forum was established last year to facilitate greater engagement between RoS and our key stakeholders:-  
The Law Society, The Royal Institution for Chartered Surveyors and the Ordnance Survey (OS).

The SPLSG (Scottish Property Lawyers Support Group) will be joining this forum soon and represent the largest law firms who focus on conveyancing, both commercial and residential.

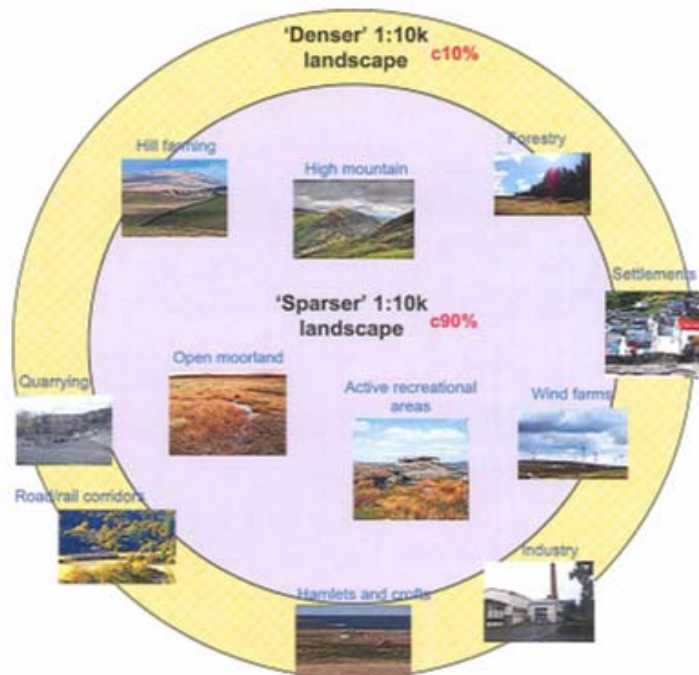
The establishment of this group allows all of these organisations to tackle plans issues with a more joined up approach.

The group is already delivering tangible results, such as more efficient communication between RoS and the OS, resulting in quicker data capture, allowing us to complete applications in the Land Register more effectively.

A main thrust of the work of the forum will surround deed plans and the Ordnance Survey Map.

Other elements include :-

- Improved deed plan criteria
- External workshops
- External engagement
- Greater use of digital data



**The landscapes surveyed by OS at 1:10,000 scale include: –**

- Lowland agriculture, settlement, transport and industry – e.g. farmhouses, steadings, hamlets, updated infrastructure, crofts and settlements.
- Upland agricultural & industry – e.g. wind farms, farms, whisky distilleries, managed forests.
- Open moorland and mountain-scape e.g. Estates, salmon fishings, wind farms.

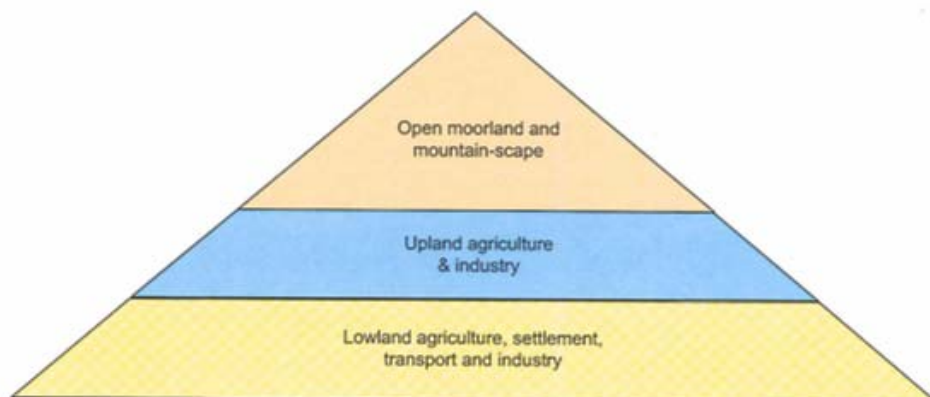
Applications falling within the mountain moorland setting or 1:10,000 mapping, which currently has a limited specification for data capture, are often high value, high profile casework e.g. salmon fishing, wind farms.

These applications are also often very complex e.g. salmon fishing, large estates with numerous exceptions etc.

It is vital, going forward that we get these, and indeed all types of application, right for both the applicant and the Keeper as protecting the Keepers indemnity and reputation is vital for the integrity of the Land Register.

So although we receive small numbers of applications in these areas, they are, nevertheless, extremely important.

## Characterising landscapes mapped at 1:10,000 scale



Feedback, including that from the recent LR Bill consultation, highlighted issues arising as a result of 1:10,000 mapping specification limitations. This from a RoS perspective has driven a need to engage with OS with a view to tackling some of the inherent issues in mountain and moorland areas. Other customers have similarly provided feedback to OS that an upgrade to these maps would be welcomed.

OS are aware of this desire and expectation of key customers and stakeholders and are currently considering a proposal to upgrade their 1:10,000 maps and best approach to this challenge.

The preferred option for RoS would be complete upgrade of all 1 :10,000 mapping to rural specification (1:2500).



Coverage of 1:10,000 areas in Scotland is shown coloured orange in this image.

63% of Scotland is affected by 1: 10 000 mapping but this equates to around 1% of registered titles so far (approximately 11,000 titles).

One specific and major impact of the possible OS upgrade on RoS, is the updating of the registered titles we currently hold and a team would be required to update all the impacted titles which, although of a relatively small number, will be of a more complex nature.

Using the PEET tool developed for PAI is not an option.

Beneficial consequences of any upgrade will be the more accurate mapping of future registrations as the new map will be more representative of features and will be improved both in terms of currency and specification.

## Current content specification

Aspect of specification	1:2500 <i>'Rural'</i>	1:10,000 <i>'Mountain &amp; Moorland'</i>
Positional accuracy	1.1m	4.1m
Minimum separation between features	2 metres	5 metres
Minimum feature size (buildings, vegetation)	Vegetation over 0.1ha and 5m wide Buildings over 8m <sup>2</sup>	Vegetation over 1ha and 10m wide Buildings shown with a minimum dimension of 5m
Cartographic features (text and symbols)	-	All appear approximately 4 times larger than rural

This table shows the current OS levels of tolerances for 1:2500 and 1:10,000 mapping.

1. For many titles in the 1:10,000 arena these specifications are not always fit for purpose, however after the OS upgrade the positional accuracy would change from 4.1m to 1.1m.

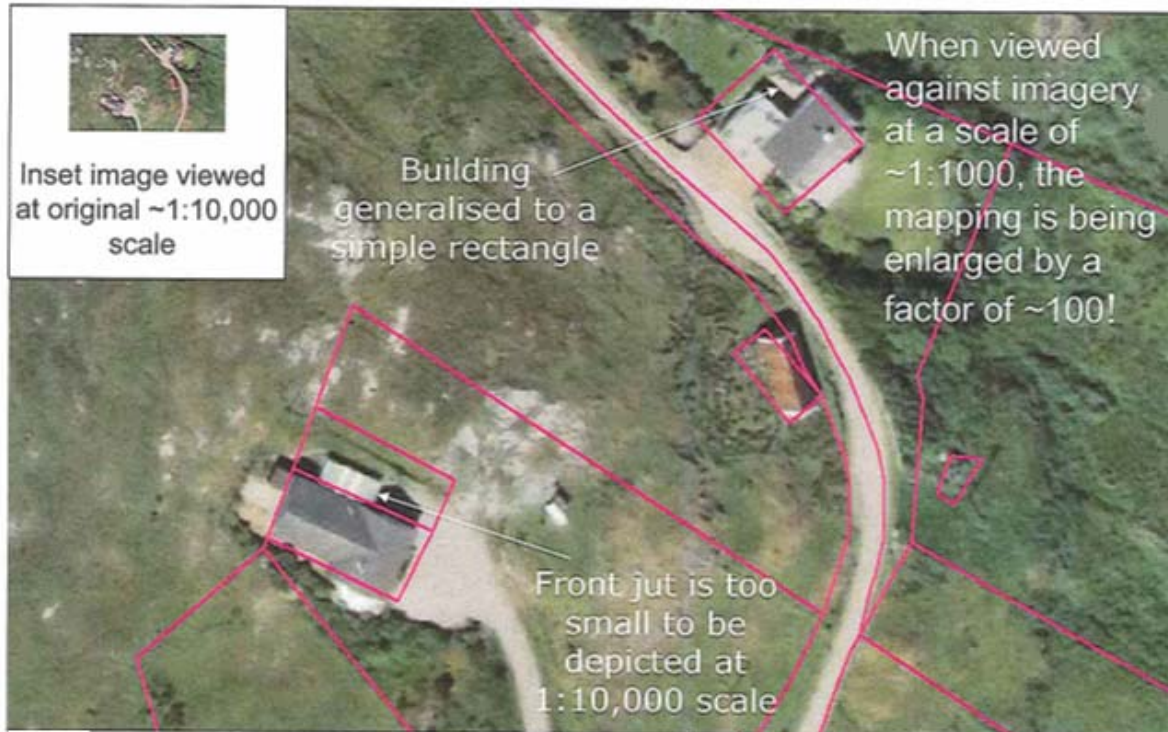
This will aid in the reconciling of deed plans with the OS Map

2. Separation upgrade will remove much of the existing generalisation on 1:10,000 maps. Features will be far more representative of development on the ground e.g.

- Roads and rivers will be more reflective of actual width.
- Areas of vegetation and woodlands will be far better represented as the geometric fidelity of these areas will be greatly improved.

3. Large scale symbology will also be removed.

## Effect of using 1:10,000 scale mapping at larger scales



This image is an example of OS 1:10 000 detail (red lines) with the aerial imagery showing underneath.

### Defects -

- The building is shown as a rectangle – doesn't show jut
- Roadway widened/generalised
- Angle of outbuilding is inaccurate



## Effects of map generalisation

Used at original capture scale, the effects of map generalisation are not so apparent



- When viewed at much larger scales, the effects of generalisation are very apparent
- Buildings generalised and coalesced
- Note impact on geometric fidelity

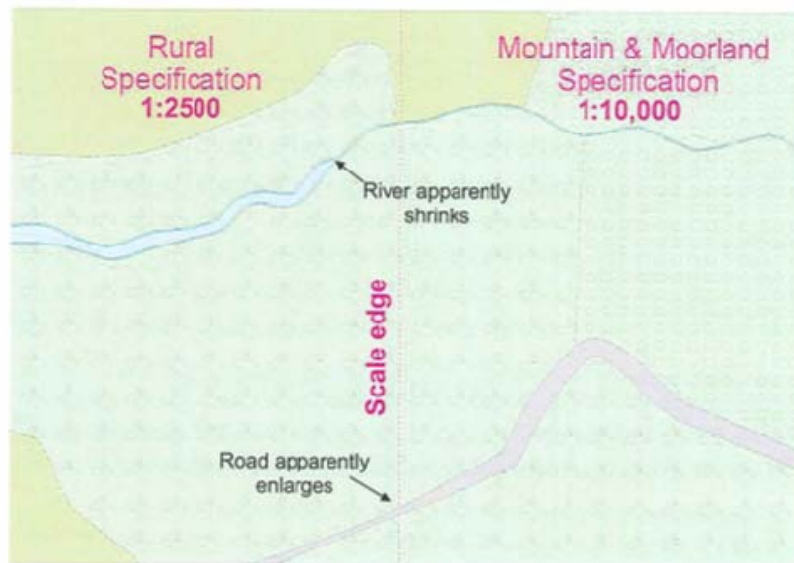
In this example we can see that the angle of the buildings is not accurately reflected on the OS map, the divisional walls are not shown and it looks like one property when in fact there are a number of separate buildings

When we are considering the mapping of any registration we must consider:-

1. Is the OS map an accurate reflection of the development on the ground? (This is particularly important if we are plotting any features as plotting from the road or buildings can be misrepresentative)
2. Can the deed plan be reconciled with the OS Map

Dependant on circumstances consideration can be given to requisitioning an OS Survey.

## Specification comparison: highlighted at scale transition



In this image we see an example of where a 1:10,000 map meets a 1:2500 map

Note –

1. The river has changed from single feature on the 1:10,000 map to a more representative feature on the 1:2500 map
2. The roadway which is generalised on the 1:10,000 map is now representative of the width on the ground on the 1:2500 map

The implications of this should be taken into account when considering the extent for registration

### Historical/recorded Deed Plans

- **Bespoke Plans**
- **Verbal Descriptions**
- **Copies of earlier version of OS Map**

Customers are aware of modern surveying techniques and the limitations of 1:10:000 map specification.

We have to ensure we deliver a quality product and an accurate one and to do this we must consider the suitability of both the OS Map and the deed plan

Bespoke plans come in all shapes and sizes.

Because of the various styles presented, close consideration must be given to whether these deeds satisfy section 4.2.a of the Land Registration Act 1979, that is; the deed plan (or description) cannot be accepted if *'it relates to land which is not sufficiently described to enable [the Keeper] to identify it by reference to the Ordnance Map.'*

We must consider the description, measurements etc contained in the deed too if they are present, e.g. bounded on the south by road or wall.

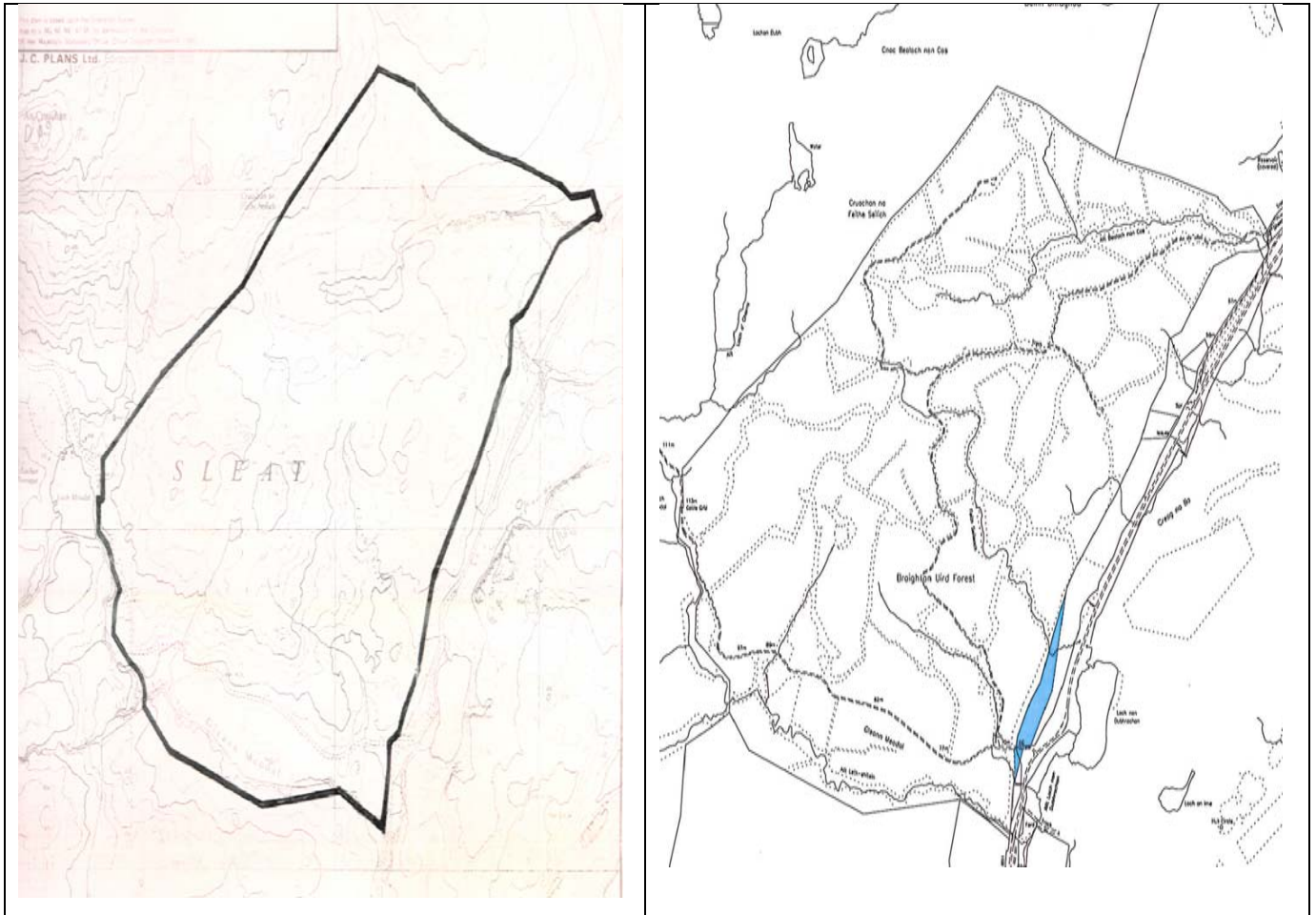
We need to be mindful of any [legal presumptions](#) on boundaries and reflect these; a good example would be Natural Water boundaries.

John King set out the Keepers position in an [article on wind farms](#) published in the law society Journal in May. He stated that a plan for registration should be of no less a scale than the underlying Ordnance Survey map. This applies to all applications not just wind farms.

Accepting plans at a smaller scale may cause difficulties at registration stage. We have the option to reject new deed plans however when the plans are historical we have to acknowledge that the deed plan is a recorded legal title. Consideration can be given to -

- Go back to agent and ask for more information about specific points or boundaries.
- Request a new plan. (last resort, but consider this before trying to best guess extent from a poor quality plan)

Where deed plans are copies of earlier versions of the OS Map we must take care to ensure that there have been no changes between the version used as a deed plan and that held by the Keeper. Even without the current upgrade project there is a good chance that some features may have been updated on the OS map held by the Keeper.

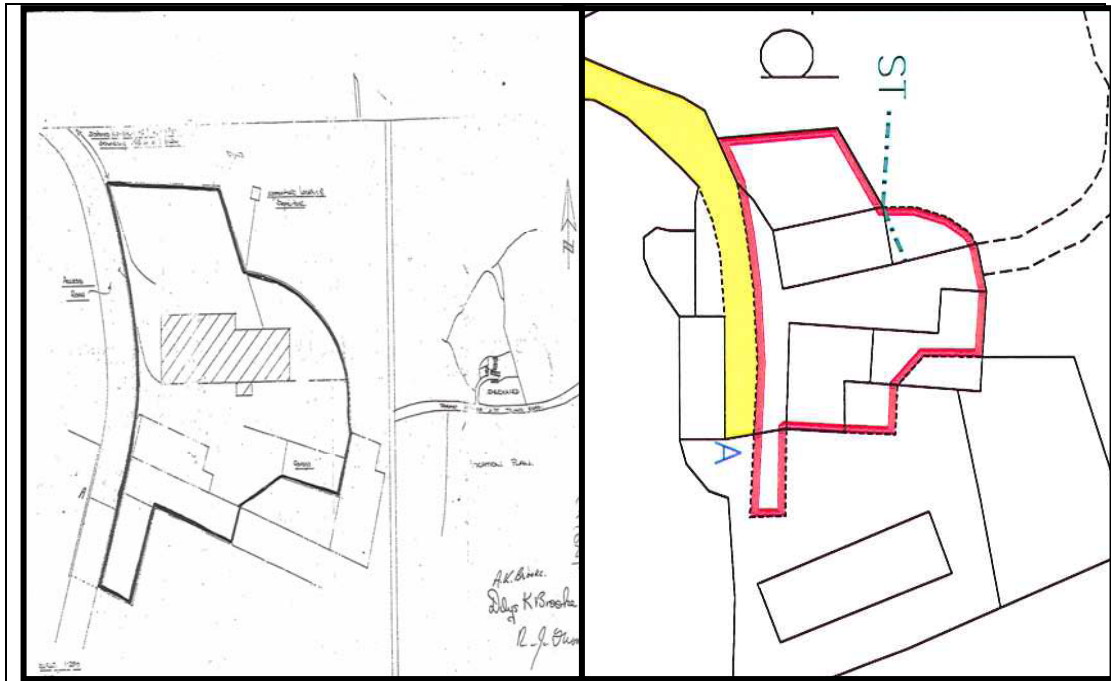


The plan on the left is an historical deed plan that was based on an earlier version of the OS Map.

On the right is the OS map version held by the Keeper. From a cursory comparison between the two versions the boundaries appear the same. However there are some significant variations.

The first is shown tinted blue- the legal title includes the area tinted blue however the fenced or apparent occupied extent does not include this area. Similarly the protrusion on the North East corner is not a consistent shape. Both of these issues would require consideration and further explanation from the agent.

This would be the preferred first step before any consideration is given to requesting a new plan.

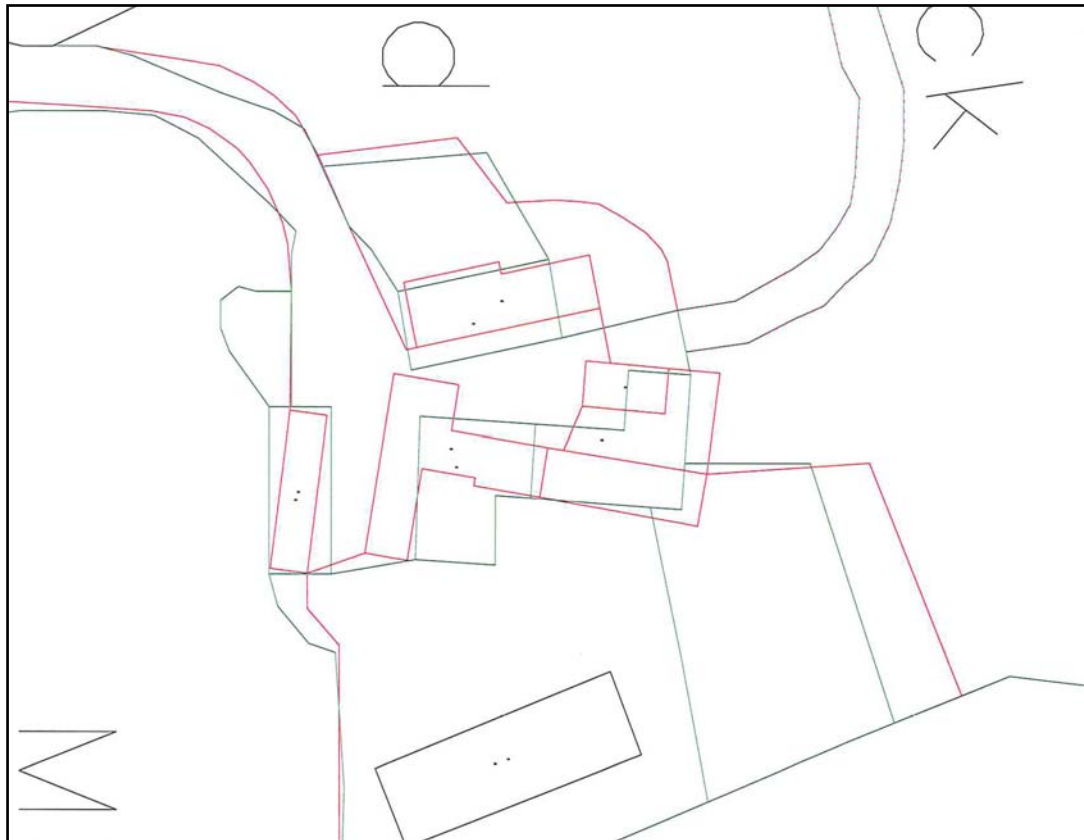


Historically when we mapped at 1:10,000 we often accepted what was shown on the map and made the best attempt to make the deed plan or legal extent “fit”.

An example of this type of issue is shown in the above image where we have a copy of the deed plan and beside it the resulting title plan. This is a classic mapping situation where an historical deed plan was used to determine the extent against the base map.

Neither the deed plan nor the base map were totally adequate for registration purposes but we made an interpretation of the Sasine title when preparing the Title Plan.

The Title Plan was challenged by an adjoining proprietor who submitted an application for rectification and, based on his comments and evidence, we requisitioned a survey.



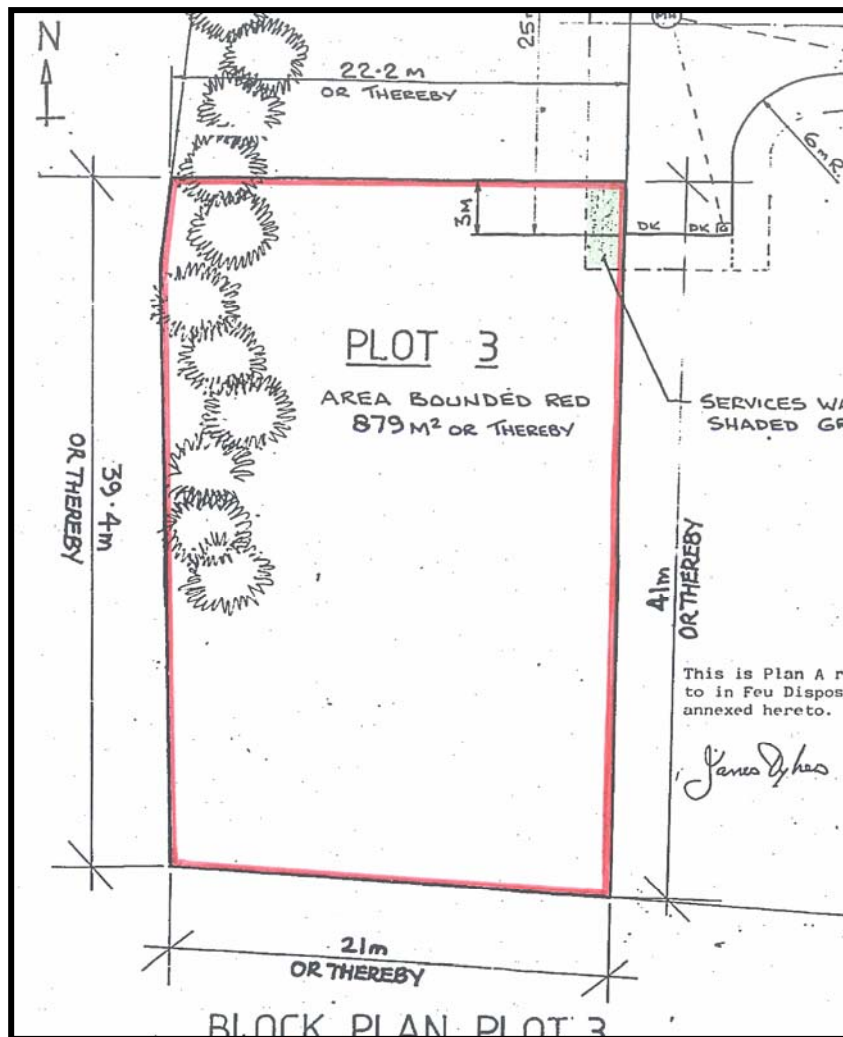
The above image shows the result of the survey. **Green old detail - Red new detail.**

As you can see almost all the features have changed and particularly the position and shape of the buildings which were the features utilised for plotting the title.

The title was consequently rectified but involved interaction from various staff in RoS as high as the Keeper, as it was also submitted as an official complaint against us.

This is not only detrimental to the integrity of the register but also to the Keeper's reputation.

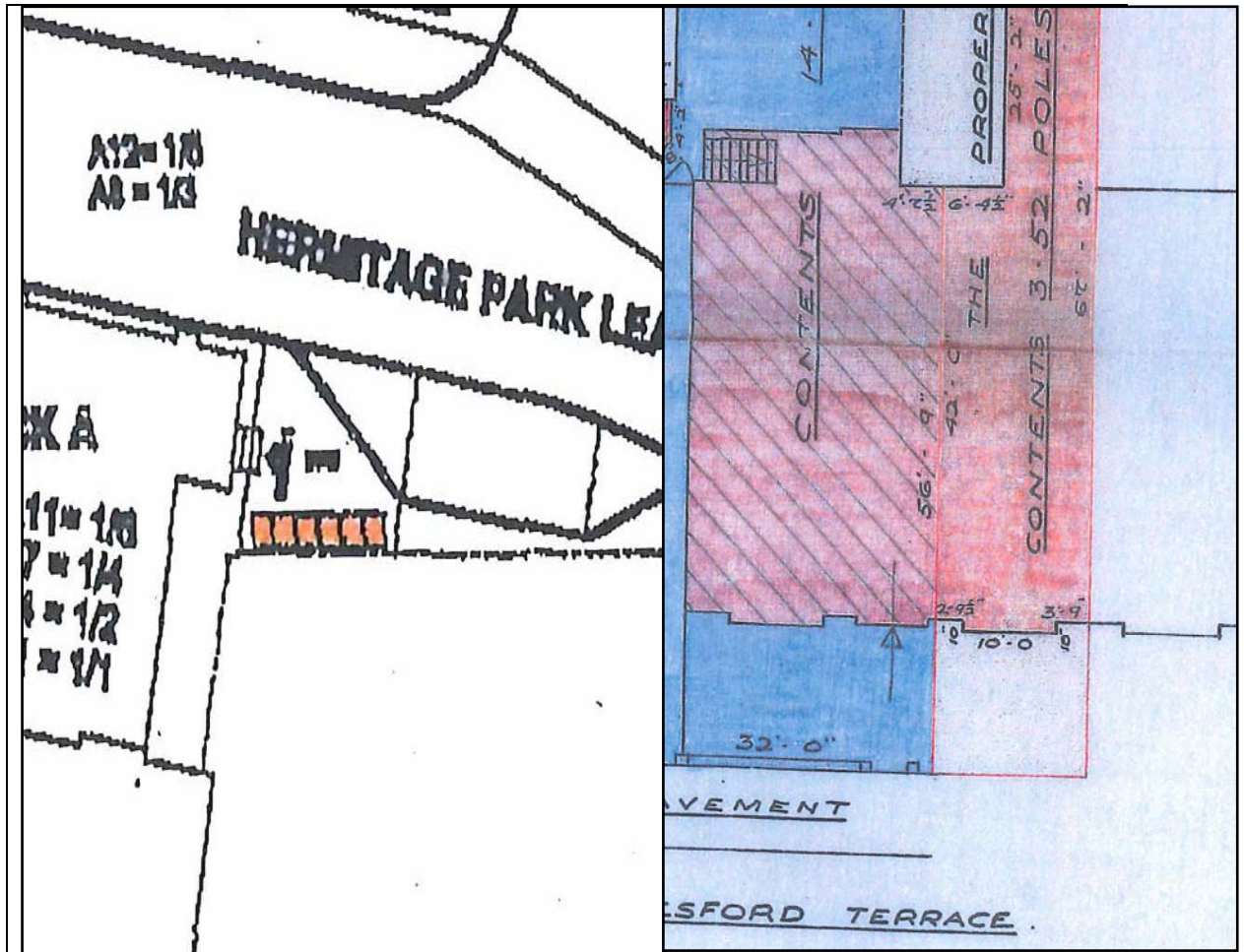
This highlights the importance of considering both the OS map and the deed plan when dealing with all applications for registration.



New deed plans come in many sizes and scales and, although the Keeper has the power to deem these plans unsuitable for registration purposes where appropriate, we cannot be prescriptive as regards the format or how these deed plans are prepared.

The published Deed Plan Criteria guidelines have recently been updated to assist conveyancers in regard to what is and is not suitable for our purposes.

If a certified plan has been submitted either by annexation to the DIR or at our request, then the usual considerations will still apply as to whether it represents the legal extent and it must still follow the rules regarding appropriate scale.



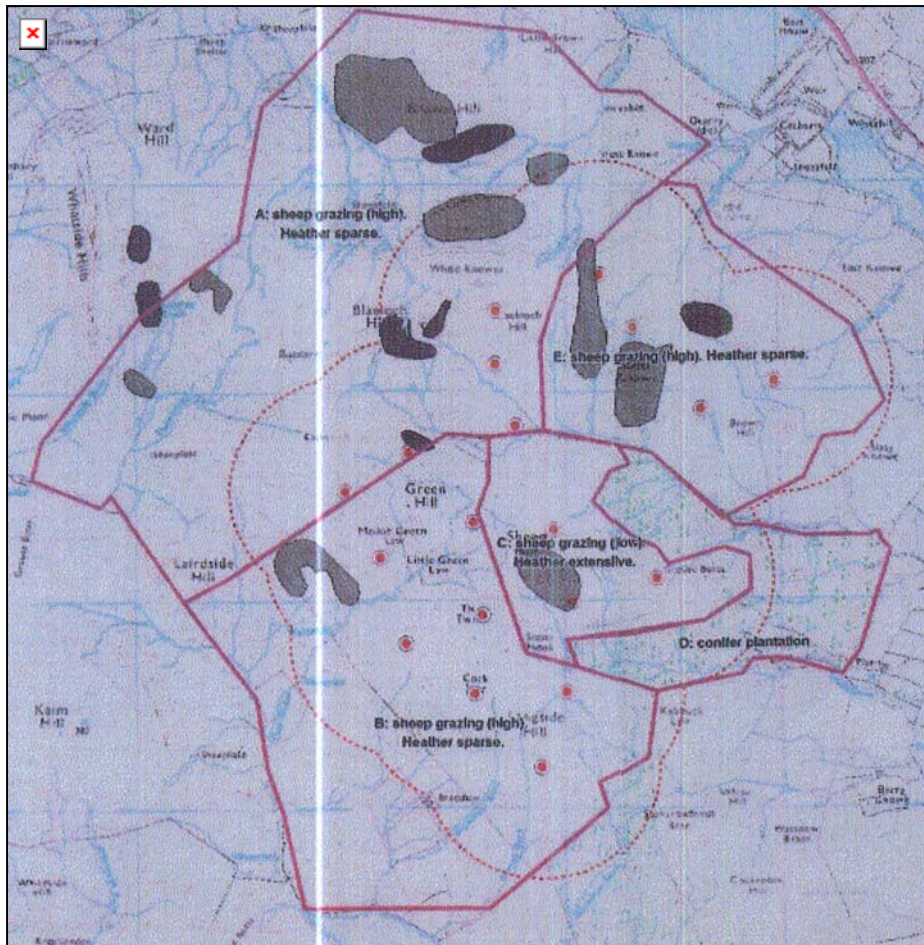
New deed plans may be more detailed than the map and if the detail on the new plan is of a higher specification then we must take this into consideration. If the plan shows detail that we would never expect the OS to reflect, such as small juts etc, then we will map in the usual manner.

1. In the left hand example the Ordnance Survey would not normally show the bin store area (orange) on the map; however we would need to show a reference on the Title Plan.

In these circumstances the deed plan must be of sufficient quality to enable us to identify, plot and scale, the bin stores onto the Ordnance Map/ Title Plan.

2. The deed plan in the right hand example depicts small juts on the frontage of the building. Juts of this nature fall outwith current OS data capture specification and would not need to be reflected on the Title Plan.

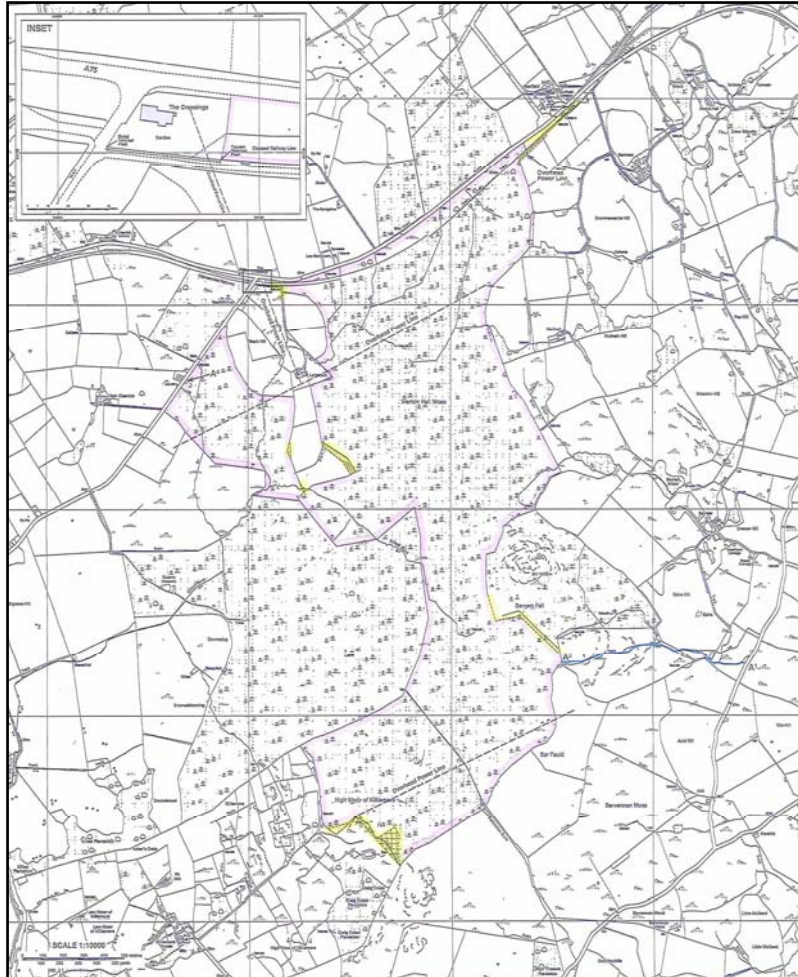




If the new deed plan is of a small scale, as is often the case with wind farms or salmon fishings and a plan has been submitted at a scale smaller than 1:10 000, then we must consider if a new plan is required.

Where a small scale plan is reflecting a field enclosure or something similar and there is no doubt or ambiguity that the corresponding detail on the OS map coincides with the deed plan, then it may be possible to accept the plan.

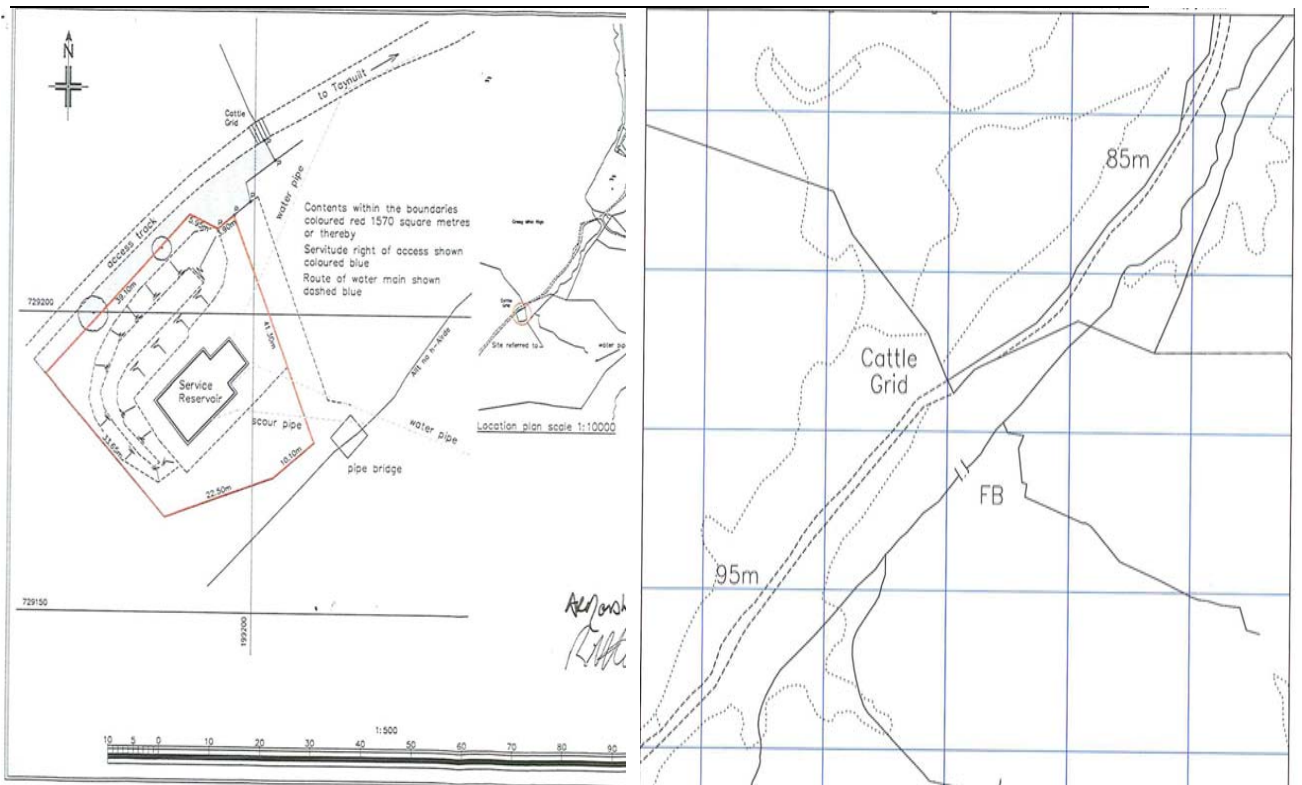
However, experience would suggest that in many cases a new plan or, in some cases, additional specific boundary information will be required.



This is an example of OS raster map used as a deed plan.

Raster maps contain many generalised features. Although it looks suitable for registration purposes further evidence or information is required for certain areas. Although many of the boundaries are consistent with the map we use some features shown as double features on our map base have been represented as a single feature on a raster map. This would we need clarification, which feature on the OS map represents the boundary?

- Is there more information in the description in the deed?
- Can the agent clarify with photographs etc?
- Can aerial images assist in determining occupation?

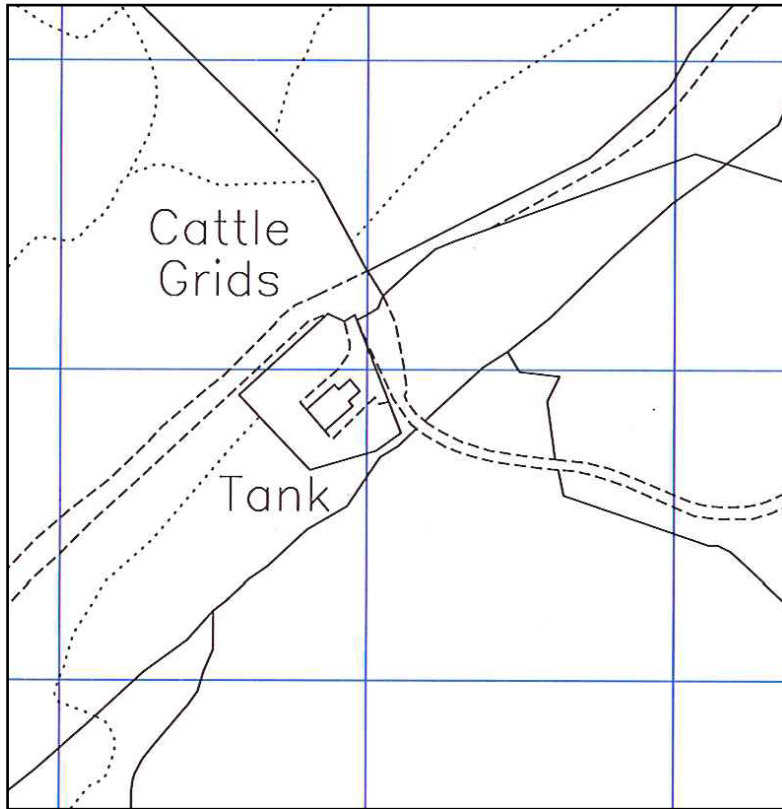


In this example the deed plan, although showing little surrounding detail would appear to be a reasonably good quality deed plan, prepared at a suitable scale for the detail it is depicting.

We can see the North West boundary lies to the south of the road and there is a reasonably sized jut on the North East boundary, the geometric shape of the extent is irregular.

No detail has been picked up by the OS as can be seen on the right hand image and a survey would be requested.

Historically, if this plot had already been surveyed at a scale of 1:10 000, we would expect more generalisation of the features. If that were the case a re-survey at 1:2500 may still be requested in order to accurately reflect the extent shown on the deed plan.



In these images we can see the updated OS map reflecting the survey requisition.

In the new map detail we can see the building has been shown reflecting the juts, this is because the new survey detail has been captured at rural specification.

It is an important point to note that although maps can be stated to be 1:10,000, any new data picked up will be to at least the rural specification. So where a 1:10,000 map contains buildings showing juts of this nature we can have confidence the data has been captured at rural specification.

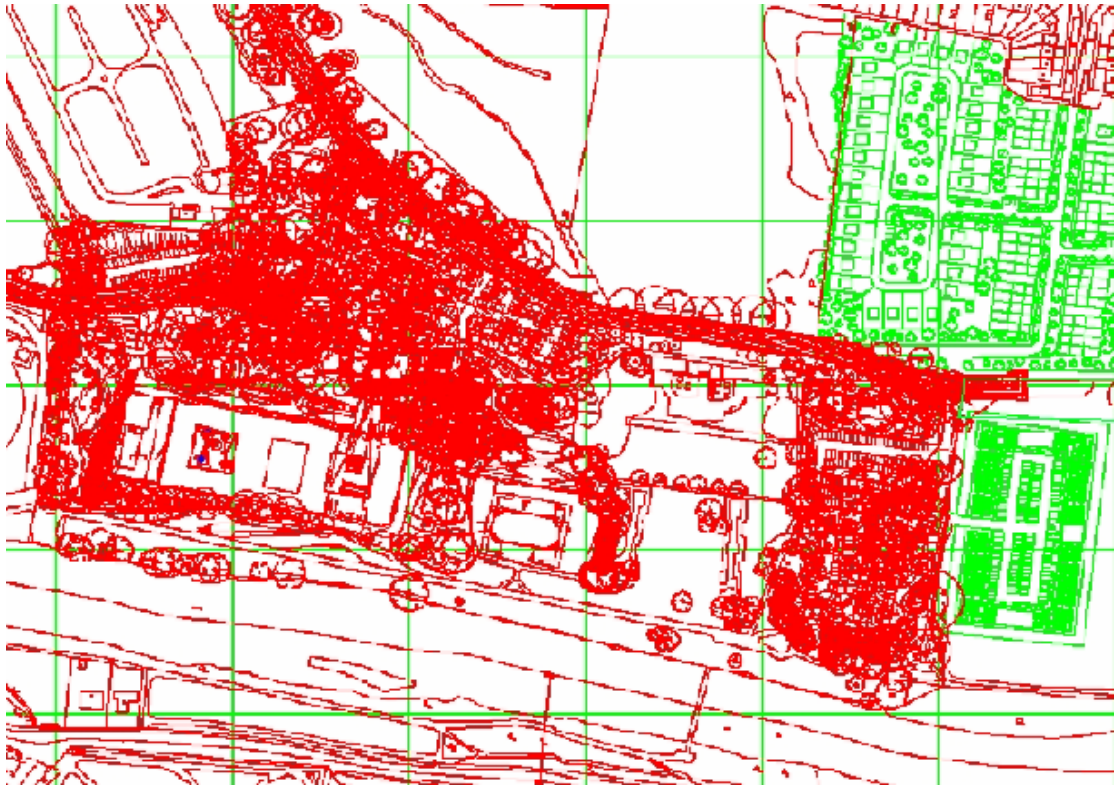
## DIGITAL DATA

Any recently prepared deed plan has most likely been created digitally.

It may be useful, especially for larger titles, to consider requesting this digital data. The GIS team can load the information into the DMS for us, saving an enormous amount of time in plotting that will also result in an accurate representation of the title.

The signed deed plan or description however is still a legal requirement, and as such we must be satisfied that any digital data received is an accurate representation of the subjects in the deed.

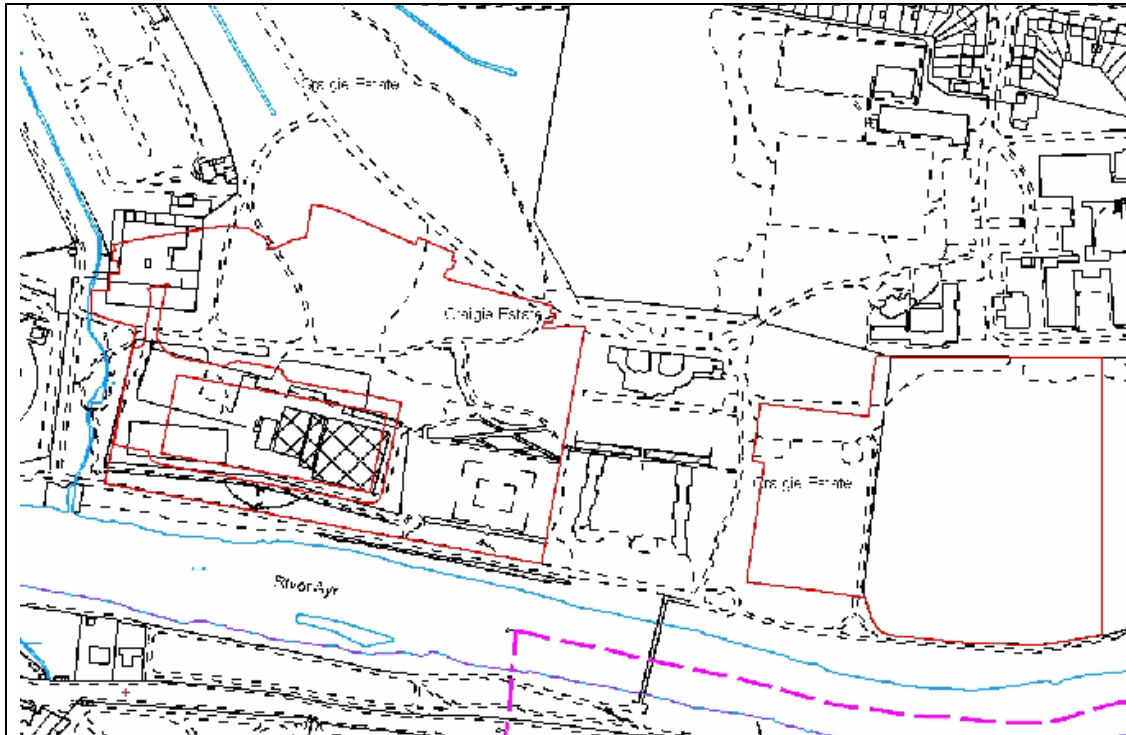
An RO1 must be consulted before considering any requisition of digital data.



This image is an example of a CAD drawing (computer-aided design) that was submitted to identify common areas for a Title in Ayr.

These type of drawings look very complicated as they can contain additional information such as trees, drainage, manhole covers etc.

The GIS Team within RoS has the expertise to extract the relevant data required for Land Registration and you can see the results in the next image.



The polygons in red against OS background have been extracted from the CAD and imported to the DMS.

Cleansing the data depends on the quality of the CAD, the separation and distinguishing of the layers that make up the drawing and geocoding the data to the British National Grid.

In good quality CAD drawings the relevant detail can be picked out in about 15 minutes, poor quality ones can take up to a couple of hours.

A point to note is that if we receive a deed plan at a scale of 1:50,000 then inclusion of digital data will still not allow us to confirm with any degree of certainty that the boundaries depicted by the digital data accurately reflect the detail on the plan as it is so small. A new, larger scale plan will still be required.

## Summary

- Exercise caution when considering the extent to be mapped.
- Is the quality of deed plans and feature representation on the OS maps acceptable?
- Do deeds meet [section 4.2.a](#)?
- Check to see if there is new map information available but not defaulted.
- Consider what is being registered; consider the narrative of the deed and [legal presumptions](#).
- Is the detail on the OS map fit for purpose?
- If not, is a survey required. (consider the guide in section 22, section 9 of the plans manual covering [10 points to consider before submitting a survey](#) )
- Check SDB for Aerial imagery, County Series maps etc.
- Consider if any additional information may be required from agent.
- Consider what size the Title Plan will be, consider splitting the Title.
- Use the RO1 Plans reference points for guidance.
- Consider new plan. (last resort)



Please contact the Senior Plans Advisors, Rhona Elrick, Carole Russell or Stevie Arnott with any questions or for further information.