Quickspec for topographical and measured building surveys

This quick reference Specification Sheet, summarising the full RICS Guidance, is intended for use on small or straightforward schemes and assumes that the first option clause (where appropriate) is used throughout. Margin numbers indicate the relevant main Specification Sections or clauses.

The Specifier should tick the requirement(s) needed in each subject category. Where no item is selected for a particular category the Surveyor will assume that there is no requirement. Additional information, where necessary, should be provided in a covering letter.

If this Sheet does not provide adequate opportunity to specify the survey then the main Specification document should be used to prepare the Survey Specification. **Please read the User Guide carefully**.

Clause	Subject	Choices											
1.1	**Project information**												
1.1.2	**Client**												
1.1.3	**Contact and telephone**												
1.2	**Survey extent**	Location plan attached		Textual description		Proposals plan		(Indicate items supplied by Specifier)					
1.3	**Scale(s) 1:**	50		100		200		500		Other			
2.1	**Plan control grid**	Local grid		Site grid plan		Based on national grid*							
2.2	**Level datum**	GPS derived national datum		Benchmark derived national datum		Site datum		Local datum					
2.3	**Detail survey**	Boundaries		Outline		Full detail		(see also Buildings, Section 4)					
2.4	**Trees**	Foliage lines		Trunk over 0.15m dia.		All Trees							
2.5	**Height information**	Spot heights		Contour interval		Road section spacing...							
3	**Underground services**	Cover position		Cover level		Invert/ pipe size							
4	**Buildings external**	Outline		Full		Footprint		Eaves/ridge		Elevations			
4.1	**Buildings internal**	Ground floor		All Floors		Roof		Sections					
5.1	**Plan reproduction**	Final drawings		Proof plots		Survey report							
5.2	**Digital data**	State format											
5.6	**Computer media**	Internet download		Email attachment		Portable hard drive		CD/DVD		Other			
	Remarks												

*Scale Factor applies

www.rics.org

ND Oliver & Co Ltd
Chartered Land Surveyors
Ptolemy House
7 School Road
Sale
Cheshire
M33 7XY

t. 0161 973 3495
f. 0161 962 6819
mail@ndoliver.com
www.ndoliver.com

RICS (Royal Institution of Chartered Surveyors) is the largest organisation for professionals in property, land, construction and related environmental issues worldwide. We promote **best practice**, regulation and **consumer protection** to business and the public. With 130 000 members, RICS is the leading source of property related knowledge, providing independent, **impartial advice** to governments and global organisations.

Further information available

RICS Geomatics guidance leaflet
Virtually level – an RICS/Ordnance Survey guide on the change from benchmarks to GPS heighting
An introduction to terrestrial laser scanning
Reassuringly accurate – a guide to controlling accuracy
Virtually Right – Networked GPS
Developing a vertical reference surface for hydrography
Applications of aerial photography and imagery

RICS guidance
Vertical Aerial Photography and Derived Digital Imagery
ISBN 0854069976
Guidelines for the use of GPS in Surveying and Mapping
ISBN 1842190938
Terms and Conditions of Contract for Land Surveying Services
ISBN 1842190121
Surveys of land, buildings and utiltity services at scales of 1:500 and larger – ISBN 0854065393

RICS Mapping and Positioning Practice Panel www.rics.org/mappp
RICS guidance www.rics.org/guidance

The Royal Institution of Chartered Surveyors
12 Great George Street
Parliament Square
London SW1P 3AD
United Kingdom

T +44 (0)870 333 1600
F +44 (0)20 7334 3811
contactrics@rics.org
www.rics.org

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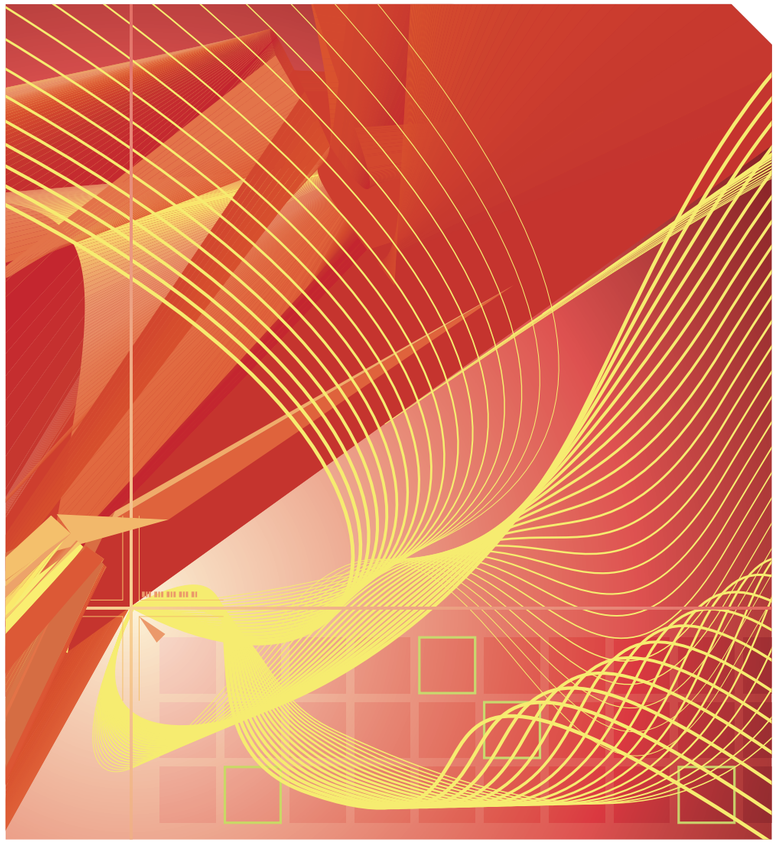
Scale

Once it's digital isn't everything full size?
A useful guide from RICS on not tripping up over step changes in scale



RICS

Is this relevant?

Certainly. Misunderstanding the meaning of scale and its application to survey can result in products which do not meet the anticipated need. An expression of scale is a simple way of defining the overall content and accuracy of a survey. Scale does not define accuracy although in a graphical product it will limit the accuracy that can be achieved.

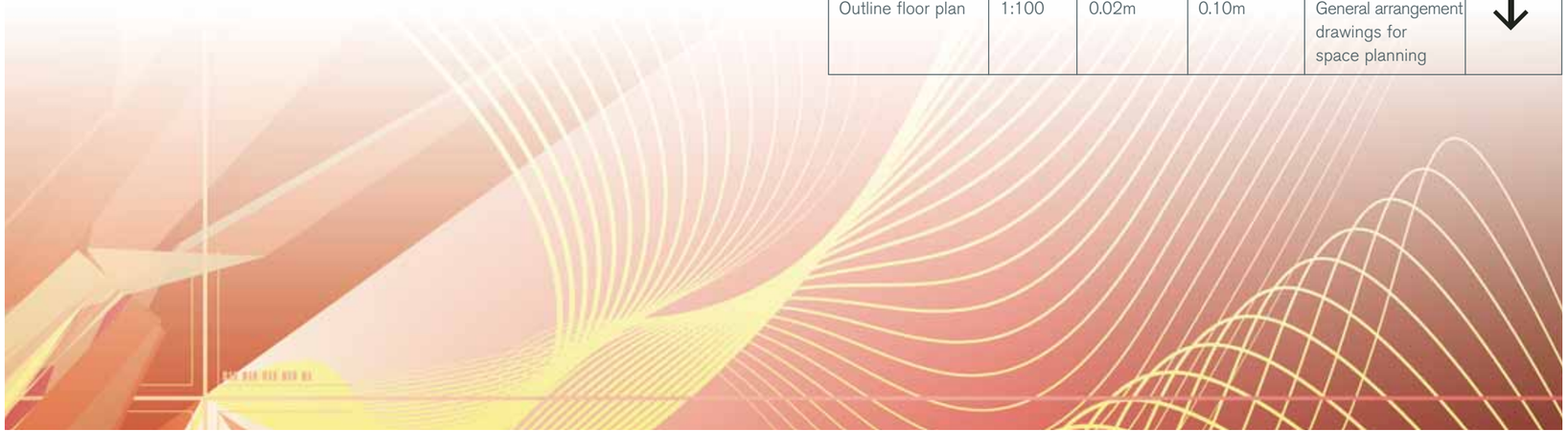
Just how much can anybody want – try asking for 1:1.

1:1 means what it says; a survey which is life size and probably costs as much as the object being surveyed! It does not mean 'dimensioned in metres rather than drawing millimetres'.

For example, 1:100 means that an object 1m long on the ground will be 10mm long on the plan. When talking about relative scale size, a scale of 1:50 is larger than 1:100 and would require a larger hardcopy plan to represent the same physical object or area.

Understanding how to use scale enables a survey to be specified easily, producing the required amount of detail to the desired accuracy, without needing to understand all the processes involved. Of course, if you are familiar with specifying surveys then a full specification will get the best for your project, but if that is not your favourite pastime then getting the scale right is a good second best.

Remember, this leaflet is a simple guide: if you are entering unmapped territory you need a Chartered Surveyor.



So where do we start?

First of all, what accuracy do we need? Traditionally, surveyors will show detail correct to within 0.2mm at the plotted scale. So, if you want detail to be accurate to within 50mm, you should specify a plot scale of 1:250. But don't forget that this is a guide. It does not apply to underground services and if the accuracy of any feature is critical you should tell the surveyor.

Secondly, what detail needs to be shown (resolution)? Normally we show any point objects to scale if they are larger than 1mm at the plotted scale. This means that, for example, a 0.6m diameter circular manhole will be shown at 1:500 scale or larger. Where they have been specified for survey, point and linear objects will be shown symbolically at smaller scales.

Drawing type	Survey scale	Accuracy	Resolution	Use	Larger scale
Land Registry mapping	1:1250	0.25m	1.25m	Mapping to identify boundary mapping related to visible ground features	
Site plan	1:500	0.10m	0.50m	Planning	
Site plan	1:200	0.04m	0.20m	Planning, building footprint or detail design	
Outline floor plan	1:100	0.02m	0.10m	General arrangement drawings for space planning	

How much text?

Nothing makes a drawing (or a computer screen) more difficult to read than an overload of text: this way, that way, overwriting; a real alphabet soup. you might not want it, but so often that's just what a bad specification produces. Zooming in might make it readable in the office, but the worker on site has to read it on paper!

To ease the problem you can specify a plotting scale. Larger than the accuracy scale gives more room for text; smaller reduces the amount of text, but lets the survey print on a smaller piece of paper.

But remember, detail is accurate to the accuracy scale specified, no matter what size the print is made.

Three dimensional data carries the heights of the surveyed points as well as their position. Two dimensional data plots the points but adds the heights as a piece of text – not the same thing at all. (Most architects use 2D information, many engineers will prefer 3D). On 2D data the surveyor will thin out the printed height text to suit the importance of the points and the space available for printing.

Making the choice

- Assess the needs of the project
- If one aspect needs a significantly higher accuracy then specify that separately as an enhanced accuracy area. Keep the rest to the general scale required
- Specify a plotting scale to cope with the amount of text you need
- If the project is simple a general description of the survey required, the intended use and the required scale may be good enough; otherwise ask the experts.

Further guidance and explanations can be found in the various leaflets and specification documents listed on the back page of this pamphlet