SOCIETY OF CHARTERED SURVEYORS IRELAND

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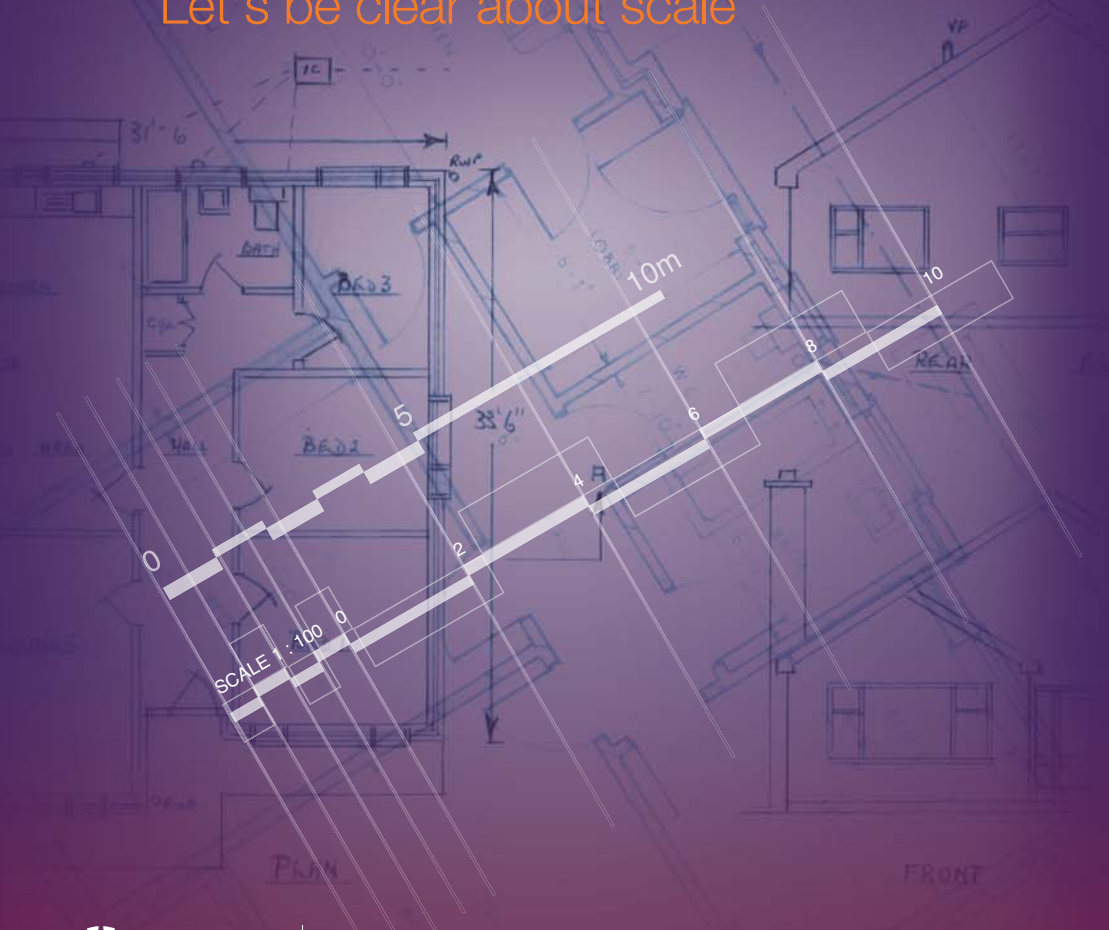
Geomatics Client Guides

Scale

Let's be clear about scale



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Is this relevant?

Misunderstanding the meaning of scale and its application to the 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.

1:1 is a life-size survey that would be extremely expensive to produce. 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. While a full specification may achieve the best result for your project, establishing accurate scale is more than sufficient.

Remember, this leaflet is a simple guide: if you are entering unmapped territory you need a Chartered Geomatic Surveyor. To find a Chartered Geomatic Surveyor within your area visit: http://www.scsi.ie/surveyors/surveyors_search

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
Property Registration Authority Ireland and Ordnance Survey Ireland	1:2500	0.50m	2.50m	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, detail design, etc.	
Outline floor plan	1:200	0.02m	0.10m	General arrangement drawings for space planning, setting out drawings, etc	

How much text?

An overload of text makes a drawing or a computer screen extremely difficult to read. While zooming in is an option on-screen, this will not be possible on-site when trying to decipher it on a hard-copy version. A bad specification produces too much text, so how can this be avoided?

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 let's 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, whereas two dimensional data plots the points but adds the heights as a piece of text. (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

This client guide is one of a series from the SCSI Geomatics Committee, the full series and professional guidance can be downloaded from: www.scsi.ie

Scale

Quickspec for topographical and measured building surveys

This quick reference Specification Sheet – summarising the full RICS terms and conditions for land surveying services – new 3rd edition 2009, 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 Client 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 Specification Sheet does not provide adequate opportunity to specify the survey then the main Specification should be used.

Clause	Subject	Choices							
1.1	**Project Information**								
1.1.2	**Client**								
1.1.3	**Contact + 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

SOCIETY OF CHARTERED SURVEYORS IRELAND

Dating back to 1895, the Society of Chartered Surveyors Ireland is the independent professional body for Chartered Surveyors working and practicing in Ireland.

Working in **partnership with RICS**, the pre-eminent Chartered professional body for the **construction, land** and **property** sectors around the world, the Society and RICS act in the public interest: setting and maintaining the **highest standards of competence and integrity** among the profession; and providing **impartial, authoritative** advice on key issues for business, society and governments worldwide.

Advancing standards in construction, land and property, the Chartered Surveyor professional qualification is the **world's leading qualification** when it comes to professional standards. In a world where more and more people, governments, banks and commercial organisations demand greater certainty of professional standards and ethics, attaining the Chartered Surveyor qualification is the recognised mark of **property professionalism**.

Members of the profession are typically employed in the construction, land and property markets through private practice, in central and local government, in state agencies, in academic institutions, in business organisations and in non-governmental organisations.

Members' services are diverse and can include offering strategic advice on the economics, valuation, law, technology, finance and management in all aspects of the construction, land and property industry.

All aspects of the profession, from **education** through to **qualification** and the continuing **maintenance of the highest professional standards** are **regulated** and overseen through the partnership of the Society of Chartered Surveyors Ireland and RICS, in the public interest.

This valuable partnership with RICS enables access to a worldwide network of **research, experience** and **advice**.

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