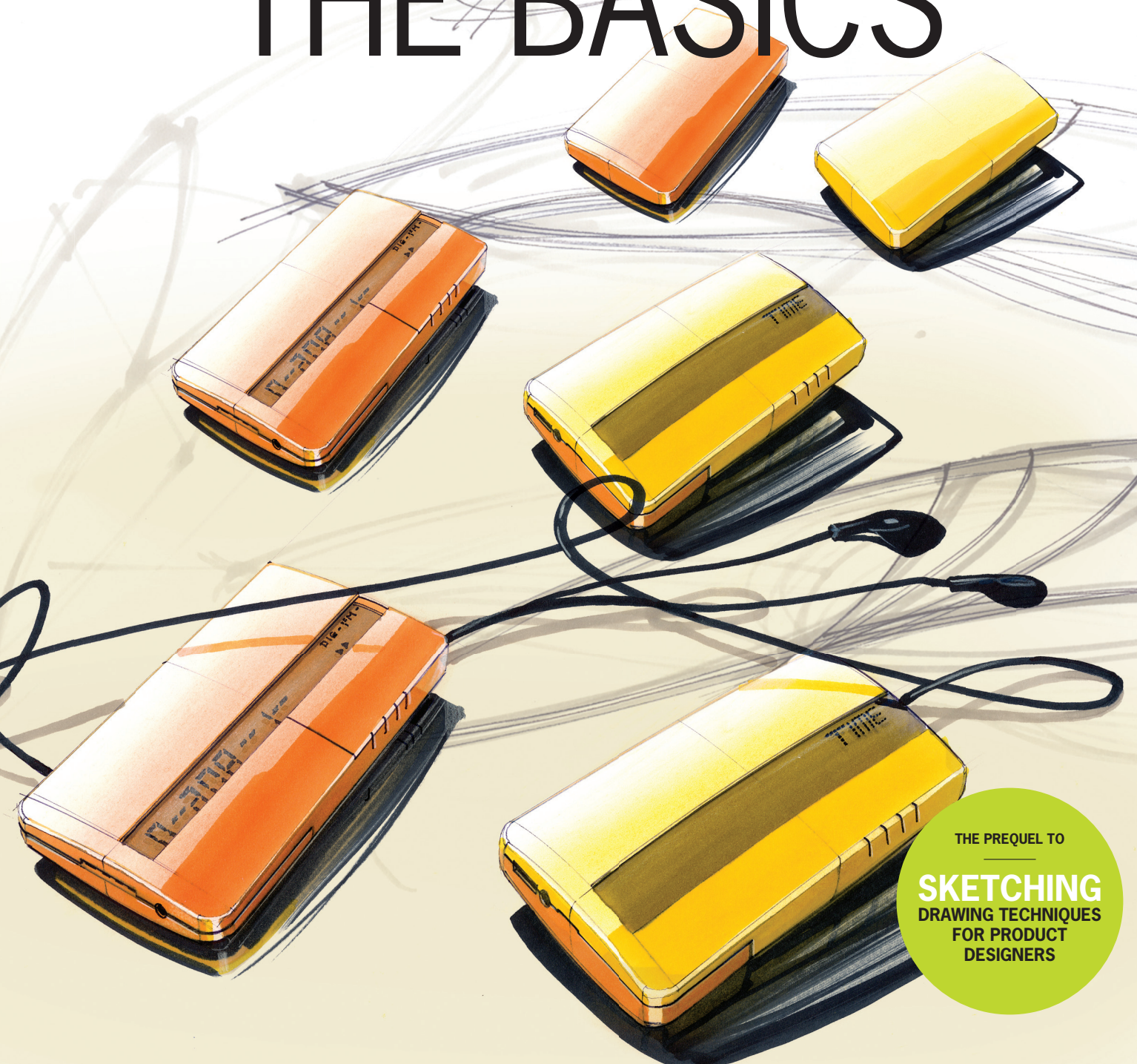


'What you always wanted to know but was never explained in a simple and efficient way.'

KOOS EISSEN AND ROSELIEN STEUR

SKETCHING THE BASICS



THE PREQUEL TO

SKETCHING
DRAWING TECHNIQUES
FOR PRODUCT
DESIGNERS

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“What you always wanted to know but never got explained in a simple and efficient way.”

KOOS EISSEN AND ROSELIEN STEUR

SKETCHING THE BASICS

BISPUBLISHERS

This book is aimed at people who want step-by-step guidance in learning how to sketch. But we could not resist including examples from designers and design offices around the world. By looking at how they work we link theory and everyday practice, and we hope that these case studies inspire young designers.

We wish to thank all the designers who were kind enough to find time in their busy schedules to send us these brilliant and inspiring projects and quotes for our book.

Thanks also to Rudolf, Bionda, Menno, Wimer, Sara, Eveline, Billy and Sandra, all of whom helped us to make this publication.

We hope that we have succeeded in encouraging students of industrial design to use sketching as an effective skill in conceiving and communicating their designs.

And to our little daughters Eiske (age 3) and Keke (age 1), we promise to not immediately jump into another big project.

Roselien and Koos, April 2011

www.sketching.nl

www.SketchingForDesigners.com

Preface

SKETCHING THE BASICS

Sketching: *Drawing Techniques for Product Designers* was first published in 2007. Intended as a reference guide, it was aimed at designers and design students, and has since been translated into different languages. We combined educational drawings, photographs and case studies from design practice to highlight various aspects of drawing, tips and theory, and also the position and use of freehand sketching in product design. In short, the theory as presented in design drawing education, and its implementation in practice, outside education. We chose for design showcases from designers educated in the Netherlands, from small independent practitioners to leading players in global firms, promoting 'Dutch Design' along the way.

Within a short time it became a much-used book by students all over the world (50,000 books were sold within two years) as an extension to their drawing education. It also argued the necessity of learning to draw for designers, and showed a variety of way that sketching is used in the design process, and a variety of examples taken from our beloved field of work.

This book can be regarded as the 'prequel' to our first book, and it is intended to be used in an integrated manner in drawing education as part of product design studies. It contains many step-by-step guides to how drawings are produced. Drawing an object or idea is not a rigid process but a lively interaction. Often it is essential to show the drawing when finished in relation to how it started. That's why we chose to show a lot of step-by-step drawings. Doing so enabled us to reveal certain drawing decisions and their impact on the final result. We also show the impact of different choices made during these steps. We based the chapters in this book on the choices and difficulties encountered by a beginning designer or student while drawing.

Design drawing is embedded in a process involving many colourful aspects. Therefore we do not wish to hand out a

recipe for 'good drawing', for such a thing does not exist. The field of sketching is both lively and changing, and the importance of drawing in relation to the design process is manifold. The first chapter discusses various drawing matters in relation to the design process. In general, we make no distinction between drawing on paper and drawing with the computer using a sketch tablet. Both methods stimulate receiving and sharing ideas, which will in many cases will aid the further development of those ideas. To visualise an idea is to present it for discussion.

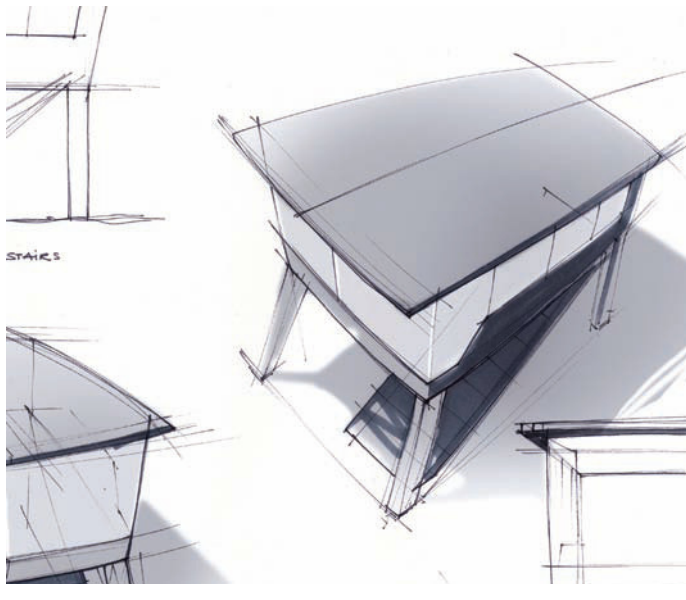
The design of a product is a process in which several people work together and contribute to. To keep the whole process manageable, these contributions need to be recorded. Sketching can be a major part of the documented design process. For a client, drawings have another relevance: they enable him or her to stay involved with the design process, to keep an overview, and to know his or her moments of input and choice.

Drawing is an excellent way of expressing the emotional character of a product, especially drawing by hand or tablet, using the designer's personal signature. But most of the drawings made during the design process are at least partly or totally based upon communicating information about shape. We will start our focus on this aspect of product communication in the following chapters. How to draw a product in a way that its shape is most clearly 'legible'.

We will show examples from design professionals based on the essence of drawing in its context. There should always be a reason behind a drawing or sketch.

Our aim in making this book can be expressed thus: What you always wanted to know about sketching but has never yet been explained in such a simple and efficient way.

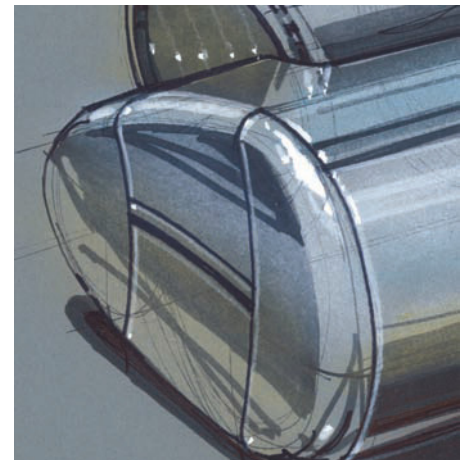
GALLERY



Material Expression
Transparency and Metal
Chapter 5, pages 130 and 134

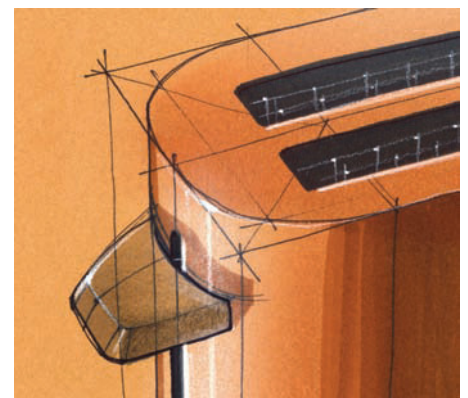


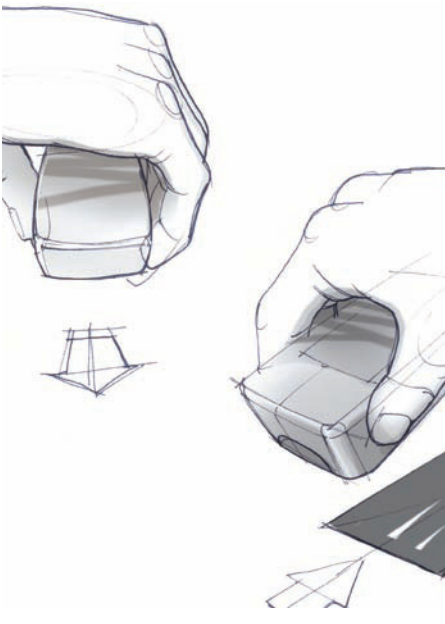
Choosing Viewpoint
Bird's Eye Perspective and Eye Level Perspective
Chapter 3, page 70



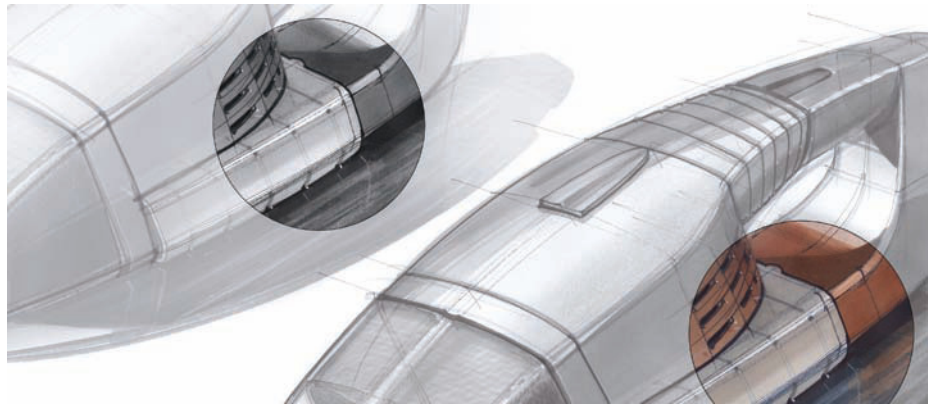
Sketching Progress
Rounding
Chapter 4, page 90

Choosing Viewpoint
Side-View Drawings
Chapter 3, page 61





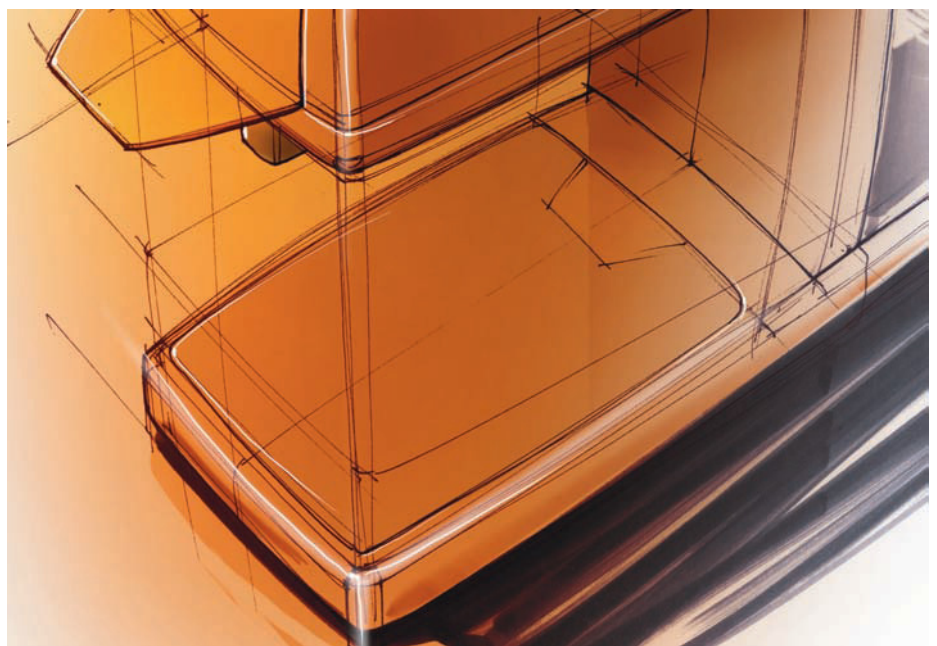
Product Context
Hands and People
Chapter 7, page 182



Product Context
Emphasizing Part of a Product
Chapter 7, page 192



Fast and Fearless
Intuitive Sketching
Chapter 6, page 162

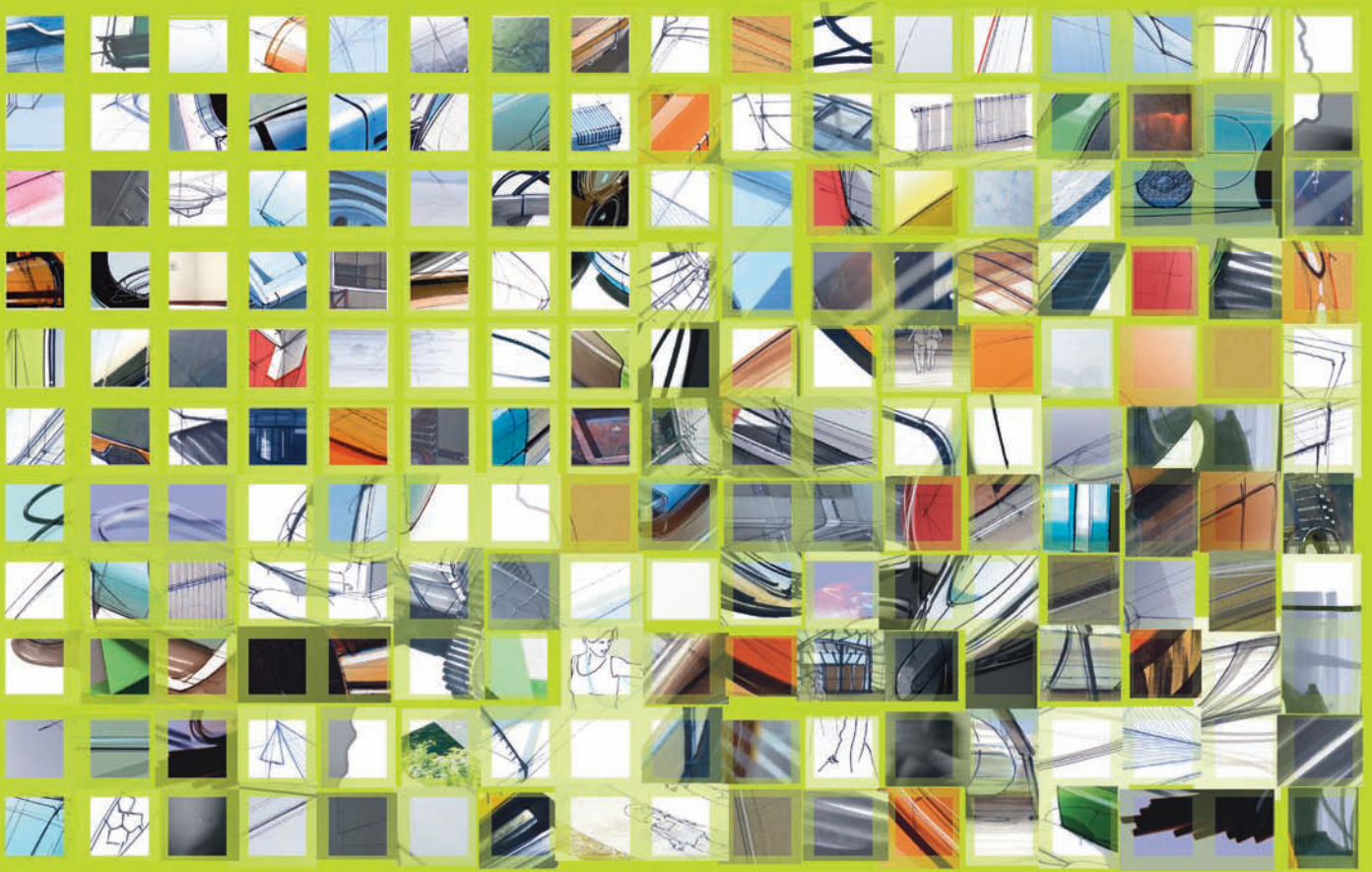


Fast and Fearless
Drawing freely, shape optimising
Chapter 6, page 153

CONTENTS

Preface	5	Chapter 3 Viewpoint	54
Gallery	6	3.1 The Informative Viewpoint	56
Chapter 1 Sketching in Design	10	3.2 Side-View Drawings	61
1.1 Ideation/Brainstorm	12	3.3 Ellipses and Viewpoints	64
1.2 Sketching and Design Phases	15	3.4 Eye Level Perspective	70
1.3 How to Practice	18	3.4.1 From Bird's Eye Perspective to Eye Level Perspective	70
Design case Art Lebedev Studio, Russia	19	3.4.2 Central Perspective at Eye Level	74
Design case FLEX/theINNOVATIONLAB®, Netherlands	22	3.4.3 Drawing Directly at Eye Level	76
Design case TurnKey Design, Netherlands	24	3.5 Ground-Level Frog's-Eye Perspective	78
		3.6 How to Practice	80
		3.7 More Tips	81
Chapter 2 Drawing Approach	26	Design case Beestudio, India	82
2.1 Introduction	28	Design case Art Lebedev Studio, Russia	84
2.2 Blocks	30		
2.2.1 Perspective in Lines	30	Chapter 4 Sketching Progress	86
2.2.2 The Viewpoint	33	4.1 Starting with a Block?	88
2.2.3 Shading and Cast Shadow	34	4.2 Singular Rounding	90
2.2.4 Marker Technique and Colour	36	4.3 Multiple Rounding	94
2.3 Ellipses	38	4.4 Tubes	98
2.4 Upright Cylinders	40	4.5 Planes and Sections	100
2.5 Horizontal Cylinders	42	4.6 How to Practice	104
2.6 Planes & Sections	44	Design case Idea Dao Design, China	106
2.7 Spheres	46	Design case Van der Veer Designers, Netherlands	108
2.8 How to Practice	47	Design case Roy Gilsing Design, Netherlands	110
2.9 Finally	48		
2.10 More Sketching Tips	49		
Design case SMOOL, Netherlands	50		
Design case Carl Liu, China	52		

Chapter 5 Expressing Colour and Materials	112	Chapter 7 Product Context	170
5.1 Suggesting Depth	114	7.1 Adding Product Details	172
5.1.1 White or Coloured Background	114	7.2 Scale and Size	175
5.2 Colour Basics	118	7.3 Background Images	178
5.3 Coloured Background	120	7.4 Tracing the Human Shape	180
5.4 Digital Sketching	125	7.4.1 Hands	182
5.4.1 Step-by-Step Digital Sketching	126	7.4.2 People	184
5.5 Material Expression	128	Design case JAM visual thinking, Netherlands	188
5.5.1 Glossy and Matt	128	7.5 Steps and Sequences	190
5.5.2 Transparency	130	7.6 Focal Point	192
5.5.3 Metal	134	7.7 How to Practice	196
5.6 Product Graphics	138	Design case Pininfarina S.p.A., Italy	198
5.7 How to Practice	142		
Design case FLEX/theINNOVATIONLAB®, Netherlands	144	Acknowledgements	200
Design case BMW Group DesignworksUSA, Singapore	146	Featured Designers	201
		Image Credits	202
Chapter 6 Fast and Fearless	148		
6.1 Lines	150		
6.1.1 Tracing	151		
6.1.2 Drawing freely; Shape Optimising	153		
6.2 Marker Use / After the Line	156		
6.3 Underlay	160		
6.4 Intuitive Sketching	162		
6.5 How to Practice	164		
Design case Ducati Motor Holding S.p.A., Italy	166		
Design case Daimler AG, Mercedes-Benz Design, Germany	168		



Chapter 1

SKETCHING IN DESIGN

This is a book about drawings in the context of the design process, and whether or not a drawing is effective within this process. This may mean that a product is sometimes visualised in a clear way, and in other cases that the drawing itself should be convincing or persuasive. There is no one criteria for a drawing to be 'good' or 'bad', and before you judge, it is important to always know the goal and context of a drawing. So making a 'beautiful' drawing is not the main purpose of this book.

We will leave a lot of the (pre) design process out of our discussion. What is important here, is that there are certain

recognisable moments in the process of design in which drawing and sketching can play a major role. This chapter focuses on these moments only. Although every design may be different, there are some generally recognisable phases in every design process. These various design phases can of course overlap, and may differ a little in each situation. Each of these phases demands different things from a drawing or a sketch.

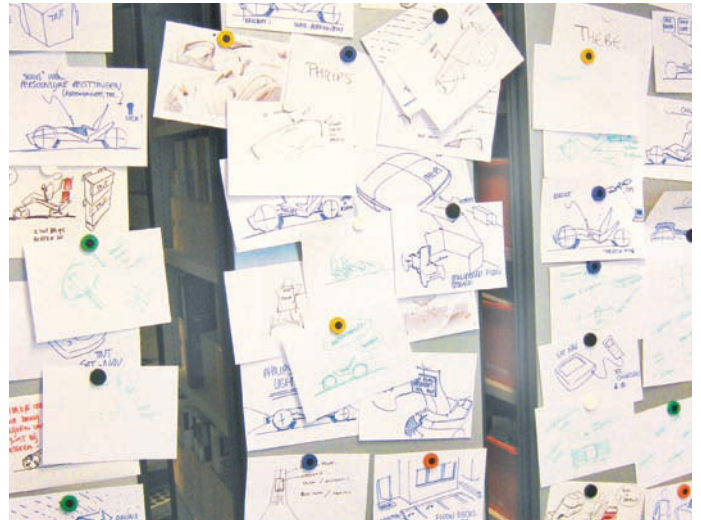
In this chapter we will discuss different kinds of drawings within the design process.

'... the beauty of design; it is like music; you do not need to speak the language to be able to work somewhere. So I could work in Italy without speaking a word of Italian, I could go to Japan without speaking Japanese. As a designer you can communicate through drawing. So you're not dependent on language or origin to establish your place....'

—Laurens van de Acker, Director of Design at Renault

1.1 IDEATION/BRAINSTORM

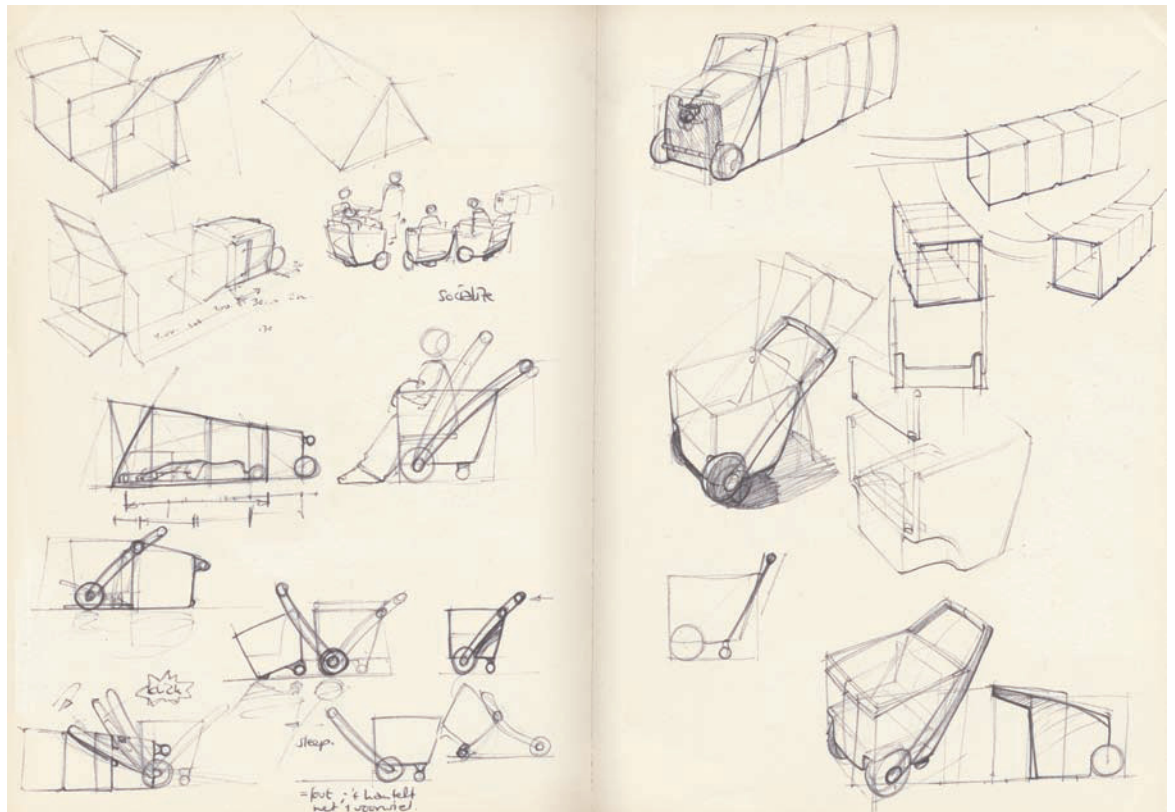
Whether you brainstorm together, with others or alone, it is important to keep the flow of ideas going, fresh and free of judgement, with room for changes in the proposals. It is not important to present products in correct perspective or with shading. It is more important that the ideas themselves are clear and either context related or context driven. This may mean a lot of schematic and archetypal line drawings in, for example, side view or a page full of line drawings as shown here. In this process of visual thinking, words on post-its or inspiring pictures could be added to tell a story.

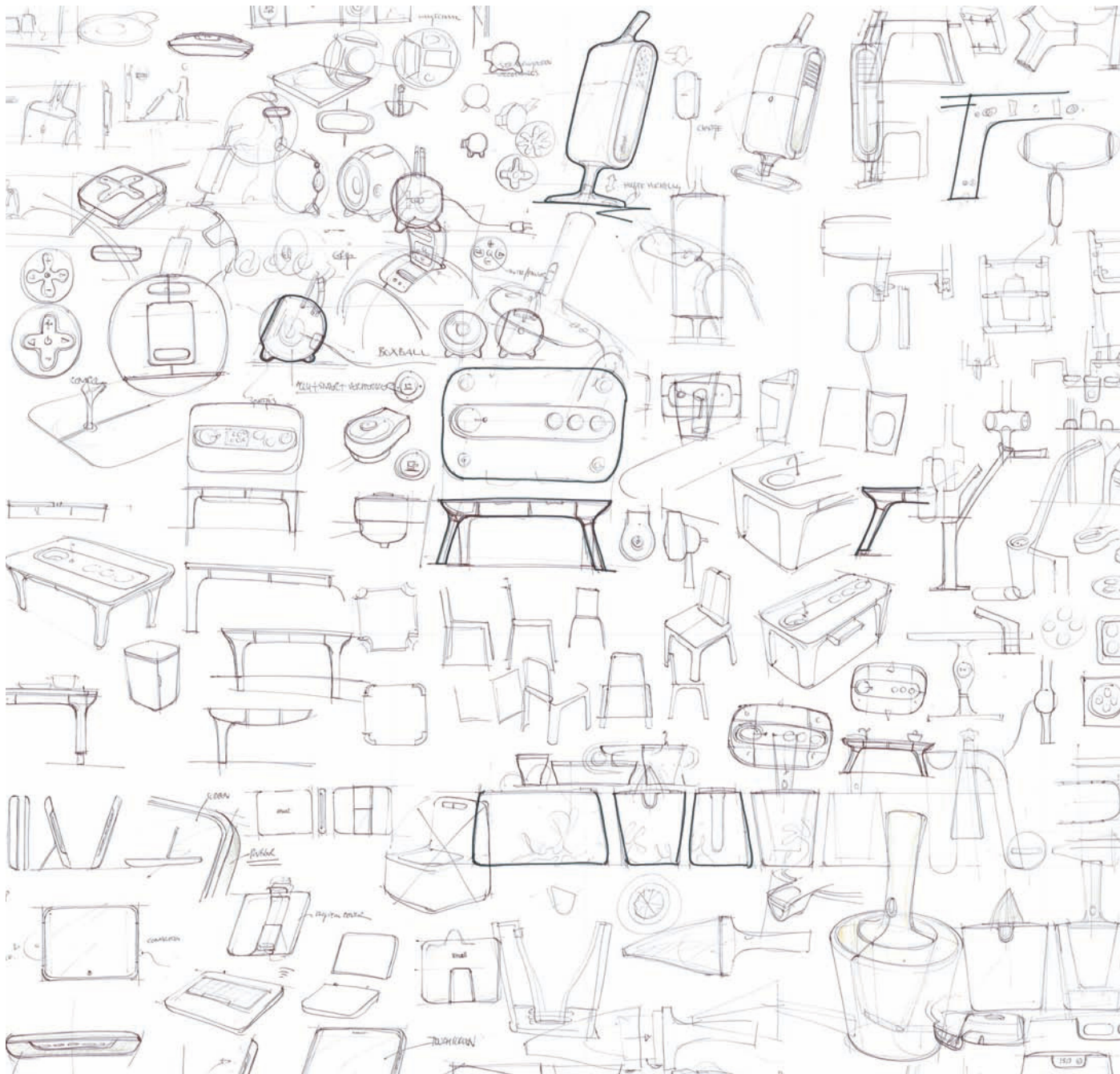


Initial brainstorm - design case FLEX/the INNOVATIONLAB®

Some typical drawings in this phase are referred to as 'doodles' and 'thumbnails', both quite small. Small drawings are justified at this stage of design because there is no room for detail. However, we do encourage drawing larger, if possible, and using a 'blunt' medium such as a marker, instead of a fine liner or colouring pencil, to create the same effect regarding details.

Some designers like to keep a booklet in which to sketch ideas. With this sketch book you can do ideation whenever you like, anytime and nearly everywhere. Making an initial ideation sketch may lead to producing another sketch, improving the first or drawing another idea. One of two things may occur with this first sketch: either something comes up that was not detected while the idea was still in your head, or this idea was already there in a different sketch, as the sketch book works like a visual recollection. Do not criticise these sketches yet, as it is important to keep the flow of ideas going; criticism will take place later.





Sketches by Robert Bronwasser, SMOOL

In the ideation phase it is important to generate many ideas, explore several variations, and end up with a range of ideas. The ideation phase will conclude with a selection of these ideas with which to continue. These are the potentially good ideas that may grow into a real proposal or concept.



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Chapter 3

VIEWPOINT

The choice of the viewpoint has a big impact on a drawing, so it's worth while to make a well-considered choice. Some chosen viewpoints make it possible to give pure shape information about an object (related to the human eye), whereas

a different choice can have a completely different impact. An object could appear bigger or smaller, but also nice, impressive or overwhelming. How do you choose and can you predict the result of your choice?

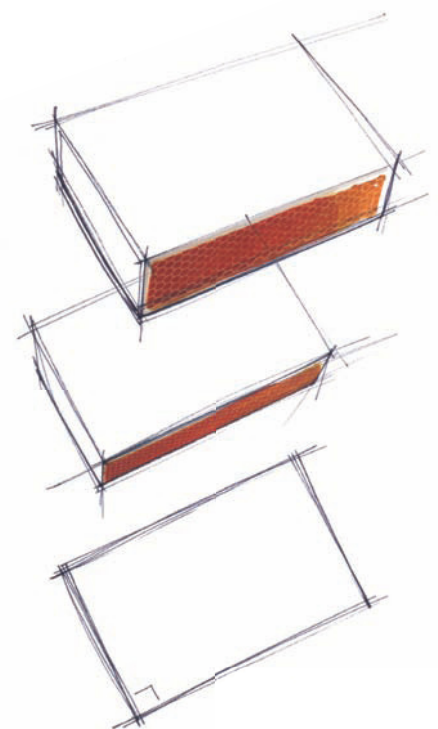
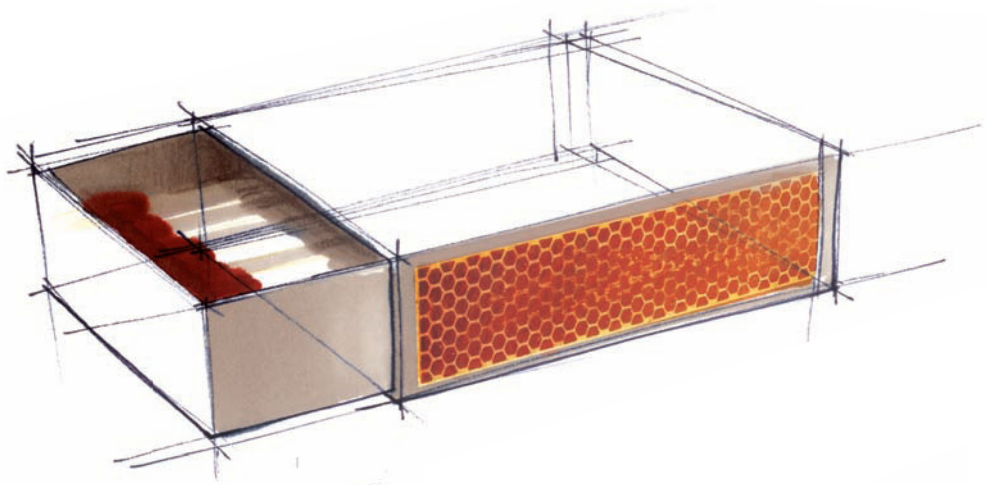
‘...Never underestimate the importance of a sketch in the design process. A good sketch can often embody a lot of character which is an essential reference when the design is translated into a 3D model, especially in car design...’
—Doeke de Walle, Designer at Pininfarina

3.1 THE INFORMATIVE VIEWPOINT

There are various kinds of viewpoints. At many stages of the design process, communication of intended proportions is crucial. Those types of viewpoints in which clearly communicating shape information is important are called informative viewpoint.

This viewpoint is all about optimising shape information, including intended scale information: how big is the object. A large object will be sketched with more perspectival convergence than a small object. In some cases the way a product is used influences the choice (user viewpoint).

The open matchboxes, for example, give the optimal shape impression in terms of both size and usage. The boxes above have top surfaces which are too foreshortened or too flat. In fact, they are positioned too near to the horizon, causing this effect. A very flat surface gives difficulties estimating its size, both by the viewer and the draughtsman. The boxes further below have the opposite effect; too high a viewpoint means the need for a third vanishing point, that of the vertical lines, which causes too much distortion to 'read' the actual size of the vertical surfaces. The sketch at the bottom shows two perspectival directions which are near the 90-degree angle. At 90 degrees the 2-point perspective changes into a 1-point perspective, and no side surfaces can be seen.





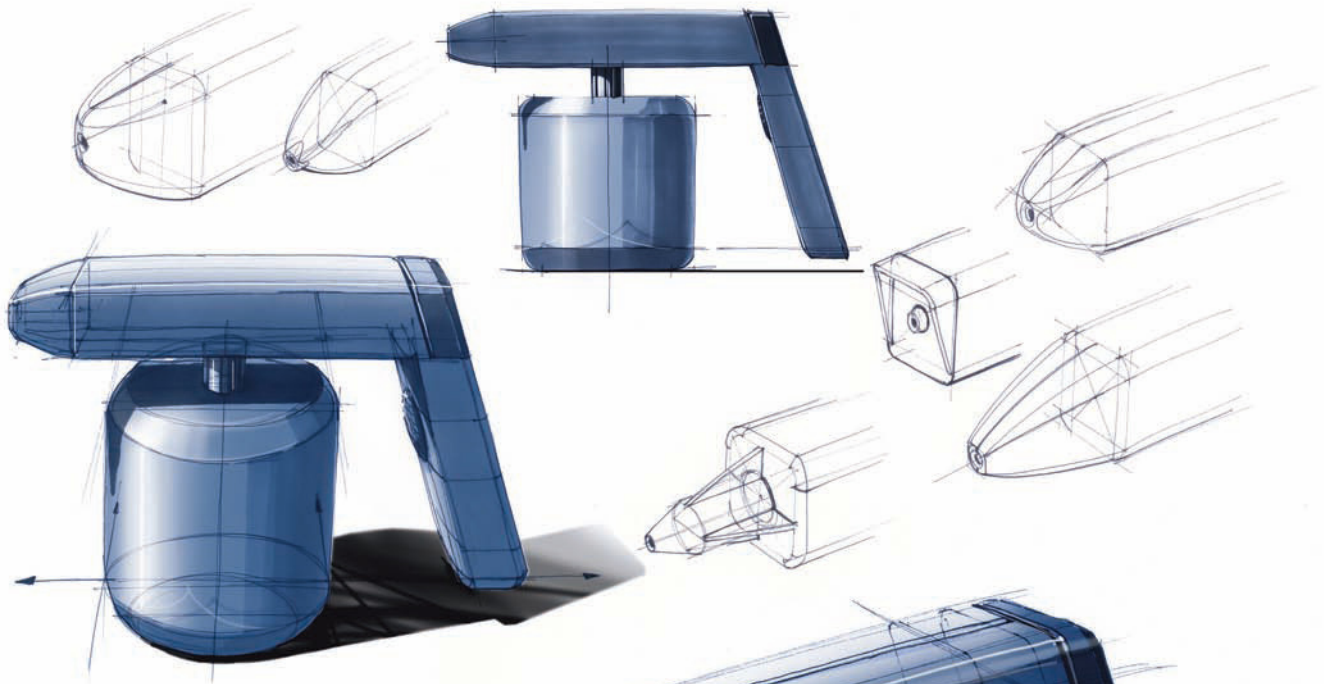
Very informative viewpoints of the toddler's red bike are found in photo A, B and C. In photo D the bike appears nice at first glance, but it does not reveal much of the (most informative) side view, and leaves the back of the bike unexplained. The same can be said about E. Photo F is also quite informative, but not optimal. It is even taken from a 'user's point of view', but the viewpoint is so low that the saddle appears too foreshortened to 'read' its shape. Very uninformative is G; it is almost a top view instead of a perspective, and therefore not

very spacious. Photo H also gives a good overview of the bike's shape, and photo I emphasizes the box carrier, but leaves the rest of the bike unexplained because of overlap.

In short, it is important that if you were to draw a box around the bike, all 3 visible surfaces should have only a little foreshortening, just like the matchbox. Besides that, there are viewpoints of which a part of the object overlaps another, and thus hides shape information.

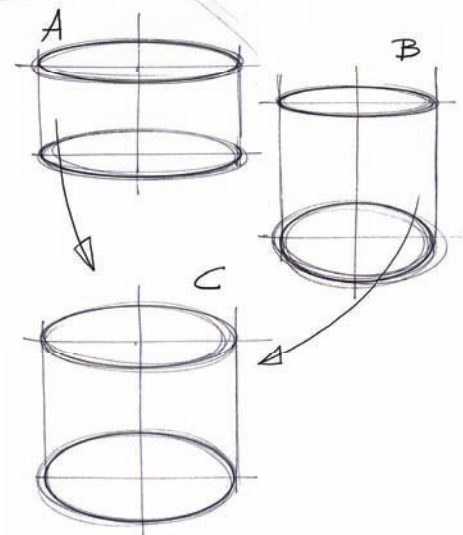
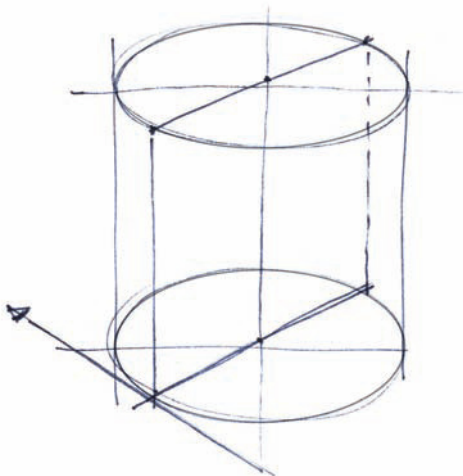
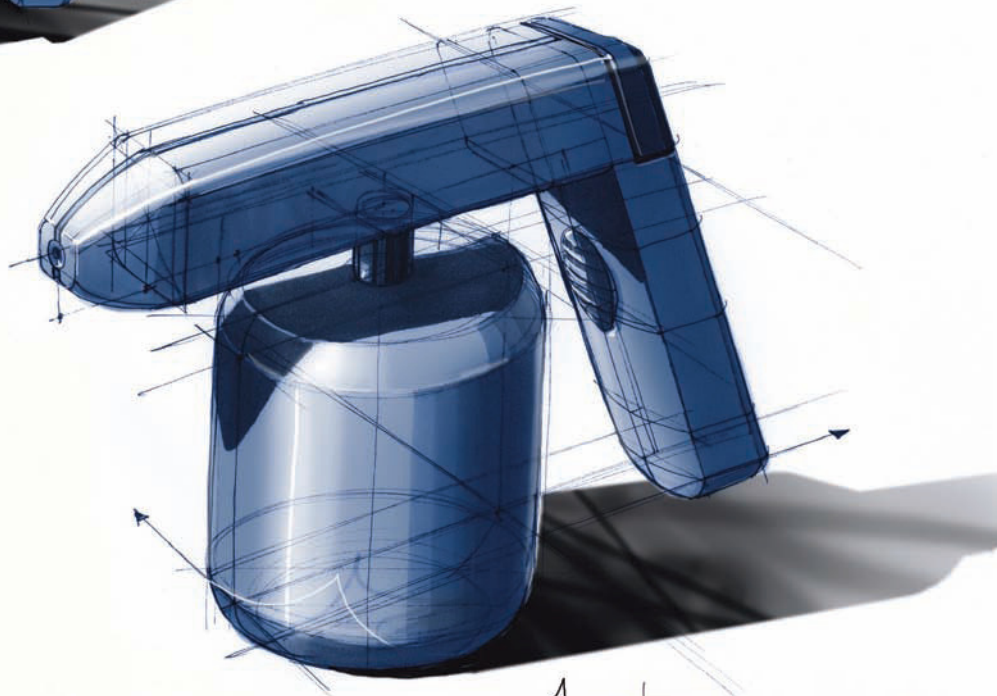


3.3 ELLIPSES AND VIEWPOINTS

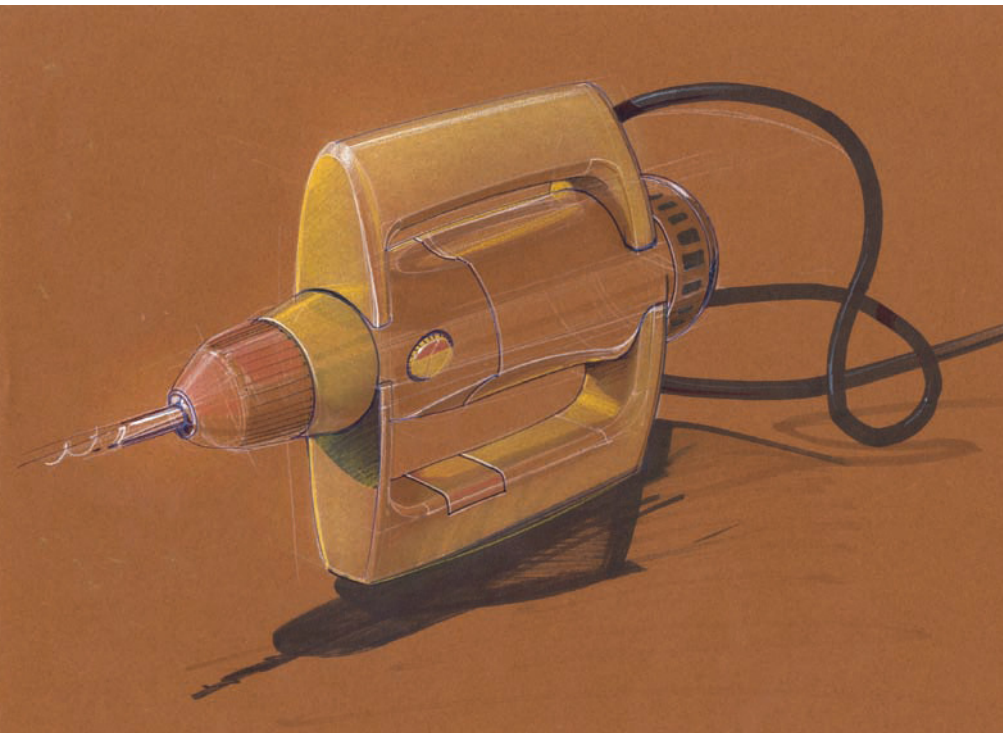


Upright cylinders are best not drawn in central perspective, such as done above. It takes more time than drawing a side view (such as in the top drawing), but in comparison does not add that much information. A better viewpoint is the one drawn at the bottom, where the nozzle is slightly turned towards the viewer. This drawing contains the most shape information and is perceived as the most spatial drawing.

The large ellipses of the paint container are used to determine the two perspectival perpendicular directions. These directions are used to draw the handle and spray nozzle.



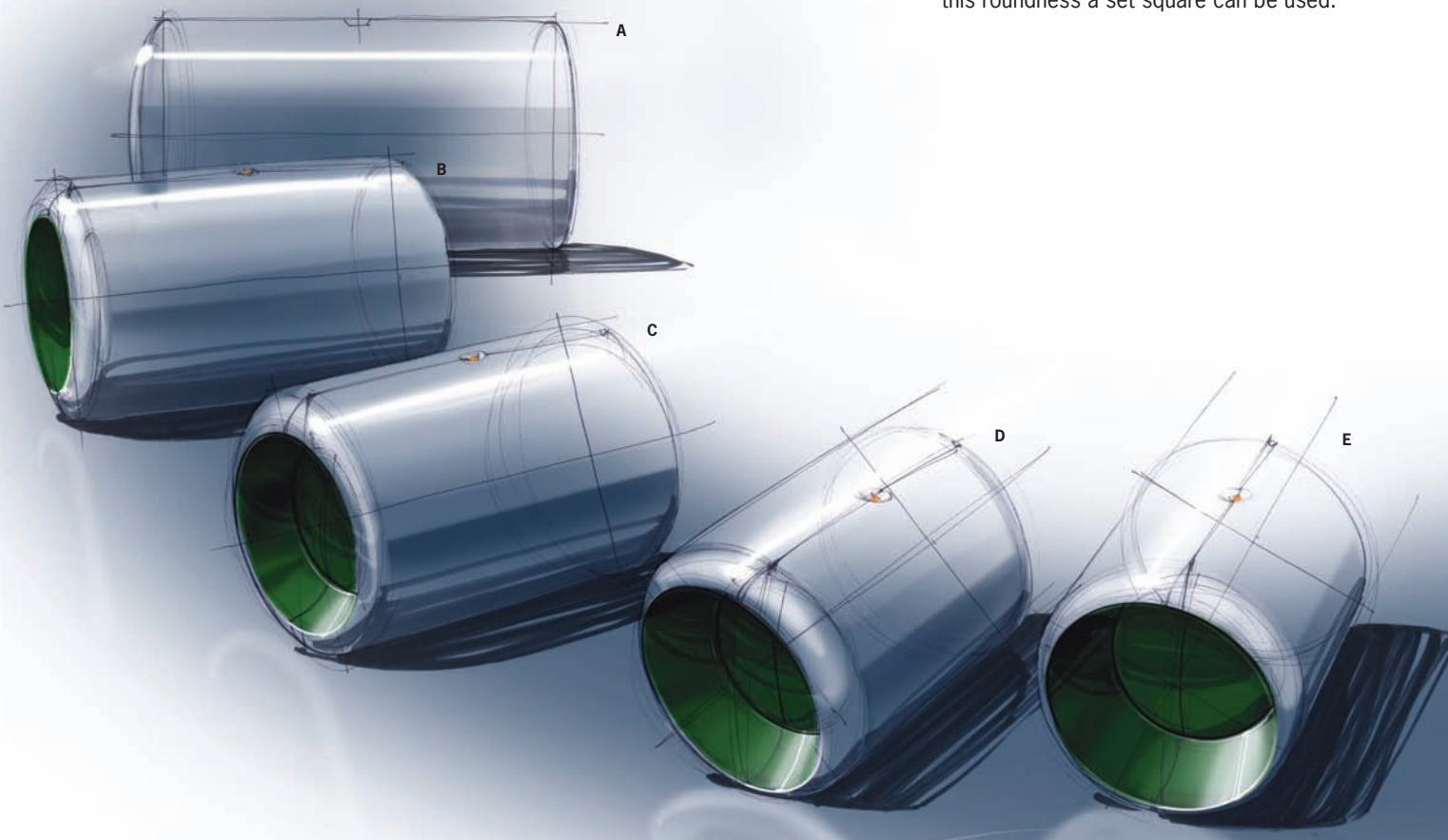
In the case of cylinder like objects, the ellipse plays an important role in determining the viewpoint. A sensible choice is not to draw ellipses very 'flat' (A) or with too much perspectival convergence (B). Sketch C provides the necessary overview and makes drawing sections easier.



The viewpoint of a product that is drawn from a declined cylinder is largely determined by the first line of the drawing: the central axis. This determines the rotation, and with that, the roundness of the ellipses, which further determines the perpendicular directions used for drawing handles etc.

A horizontal central axis in a perspective drawing means a central perspectival viewpoint (drawing A). This is not a very spatial, informative viewpoint. Drawing B has very flat ellipses which make it difficult to draw sections and tangents. Drawing E, on the other hand, has such a tilted central axis that the shape is too foreshortened in that direction to perceive its precise length. Drawing C and D are more informative viewpoints.

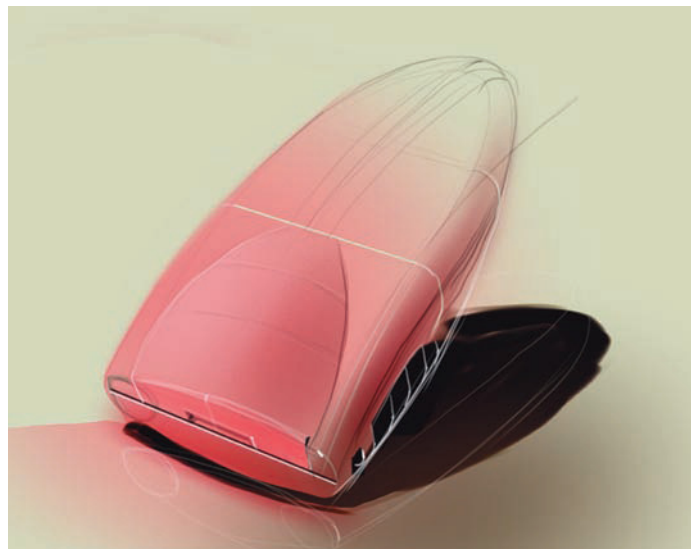
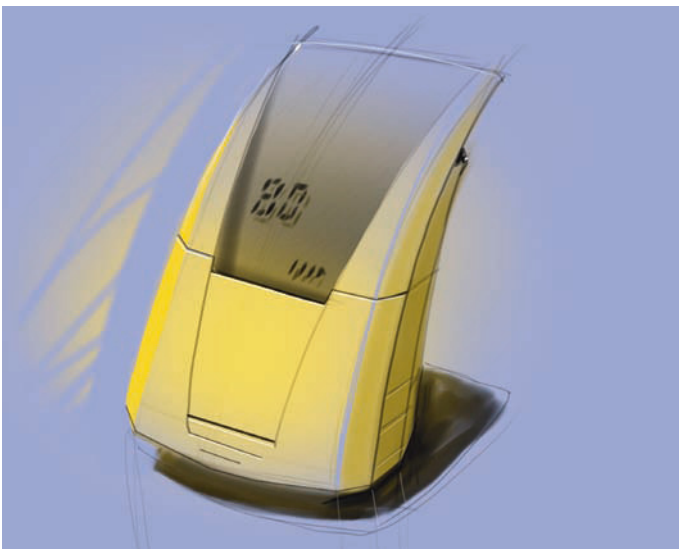
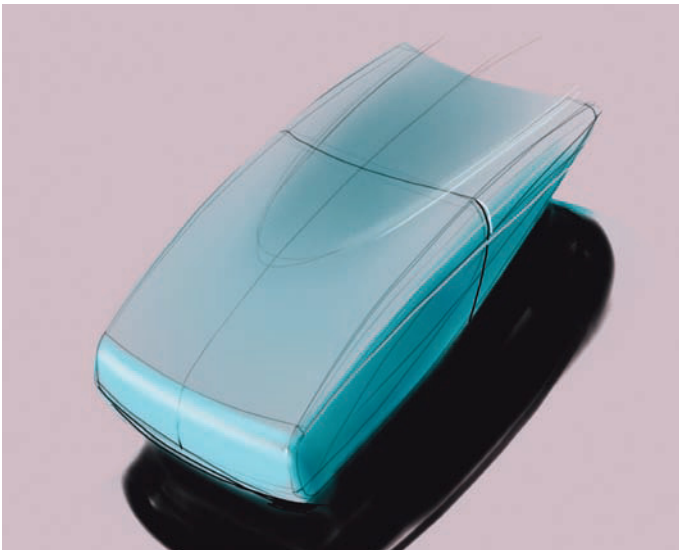
So a central axis that is not too horizontal or too steep is in most cases a good start. The directions of the ellipses are then known (always perpendicular), and only the roundness needs to be estimated. To verify this roundness a set square can be used.

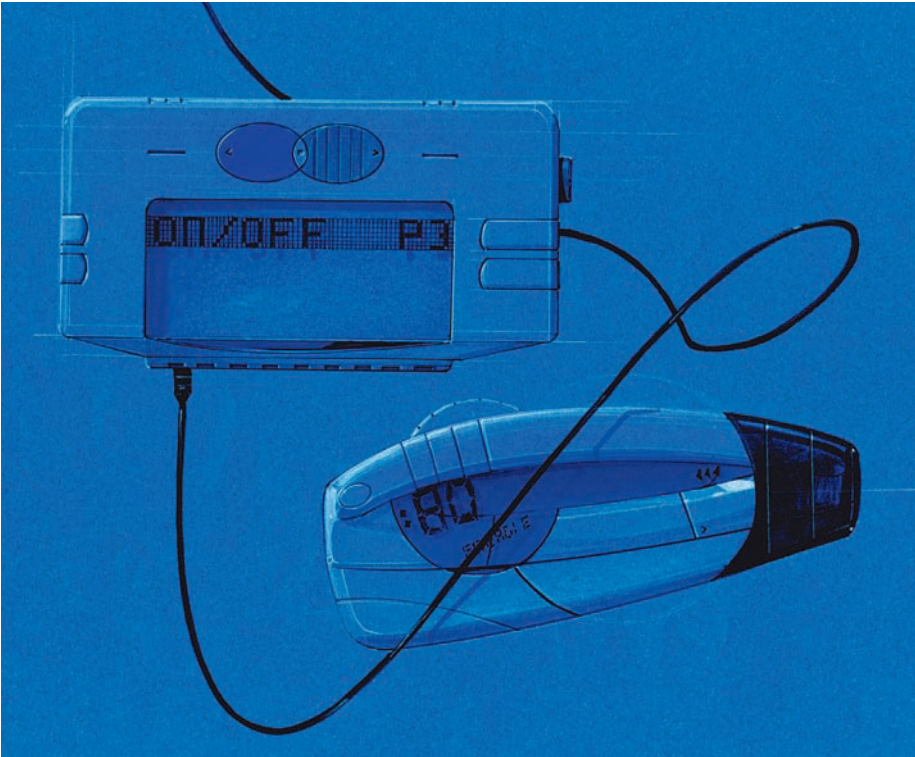


7.1 ADDING PRODUCT DETAILS

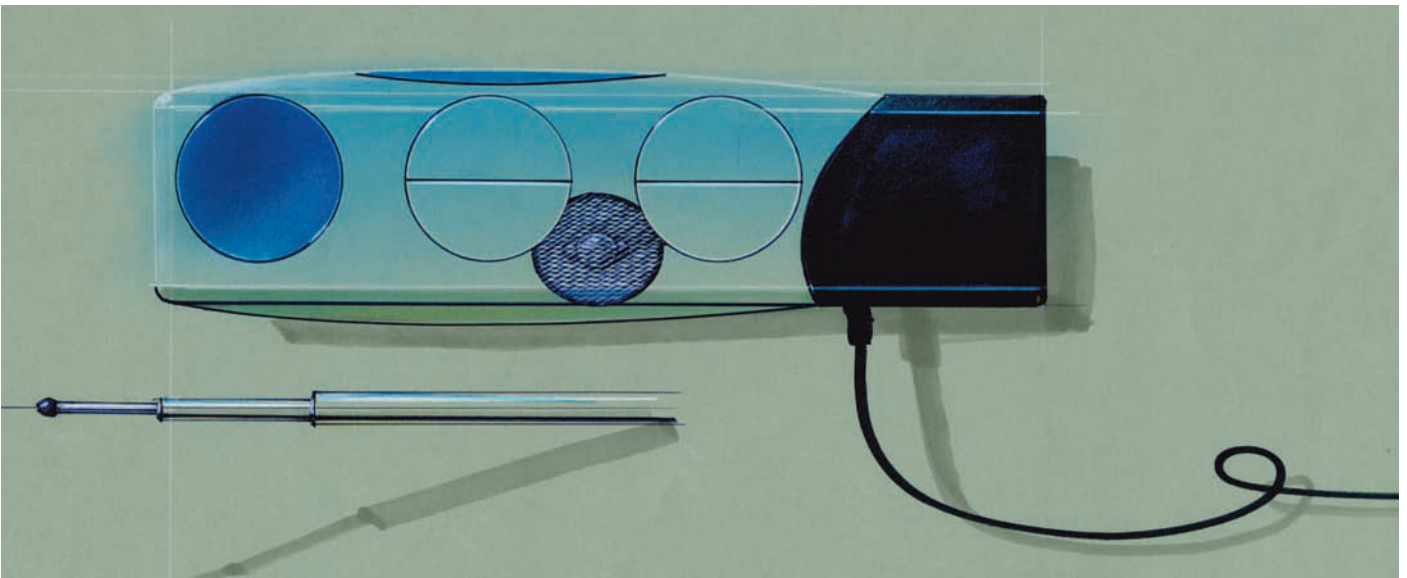
You can transform a very simple shape into a product by adding typical details such as parting seams, tabs, buttons, displays and cords. This has many advantages. For the viewer, these details convey information about the size of the product, and lend a sketch a more realistic character, which can make it easier to understand.

For the designer it may serve as a means to enliven the product idea and stimulate us to think more about an idea. Adding these details can be done relatively quickly, but they can dramatically change a sketch.





Because of the importance of the product details, it is worthwhile searching for the right layout. This can be done easily in side view, using the convenience of a coloured background, ruler, French curves and templates. Drawings at full scale can help with ergonomic issues. Using your own hand then as a reference helps to examine sizes and dimensions of details.



Tip

In both examples the colour of the object is independent of the paper colour. Add some chalk and a slight difference to the paper colour will be enough to suggest colour.

Tip

A lot of products have a 'face', a side view that tells more about the product and its most characteristic view. It is this view that is drawn in side view.