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Introduction

0.2

0.2 Craig Green SS16

“Do not quench your inspiration and your imagination; do not become the slave of your model.” Vincent Van Gogh

Construction is the foundation of clothing and of fashion design; it is vital that fashion designers know and understand the techniques involved in creating a three-dimensional garment from a two-dimensional design or pattern in order to create a beautiful shape and fit on a moving body. Garment construction involves both technical and design issues; the designer can choose where to construct lines, pockets, collars, how to finish edges and how to produce volume and structure in order to create a unique look and experience for the wearer.

From basic block cutting to the smallest finishing details on a constructed garment, *Basics Fashion Design: Construction for Fashion Design* leads you through the essential stages of garment construction and offers you a starting point from which knowledge can be extended. It introduces you to the world of pattern cutting, draping on the mannequin and shows you some techniques for breathing life into a flat design drawing in order to achieve a three-dimensional garment. Basic sewing techniques are introduced, and you are shown how to use darts, sleeves, collars, pockets and the cut of the fabric to add variation to your designs. The breadth of the subject is illustrated with a history of garment shape and construction techniques in haute couture, tailoring crafts and an introduction to supporting and structuring materials. Each chapter also includes interviews from leading practitioners and tasks to help you understand these techniques. The book concludes with finishing techniques and a selection of resources for those wishing to delve deeper into the world of construction for fashion.

With its inspirational photography and easy-to-follow diagrams, *Construction for Fashion Design* offers a clear introduction to the fundamental skills, knowledge and historical background needed for successful garment construction. I hope it will awaken your interest and inspire you to create the perfect silhouette and a beautiful, final piece.

{{AU: Please confirm that terms in bold with definitions following are key terms and should be in the glossary. If not all bold terms should be, please advise on which terms SHOULD BE key terms.}}

[[CN]] CHAPTER 1

[[CN]] Getting started

[[COMP: Insert 1.1]]

[[CAP]]1.1 Roksanda Ilincic, AW15.

[[CIX]]It is important for designers to understand the fundamentals of how a garment grows from a two-dimensional concept into a three-dimensional object. A pattern is a flat paper or card template from which the parts of the garment are transferred to fabric before being cut out and assembled.

A good understanding of body shape and how body measurements transfer to the pattern piece is essential. The pattern cutter must work accurately in order to ensure that, once constructed, the parts of fabric fit together properly and precisely.

This chapter is an introduction to pattern cutting, starting with the tools and equipment needed. Then it takes a look at the processes involved: the importance of silhouettes and proportion; sizing and grading and how to take body measurements. Finally, it introduces the basic block and pattern shapes and how the body measurements relate to these.

[[H1]]Pattern cutting tools and equipment

[[TXF]]Working with the right tools will make block and pattern construction easier. These are just some of the key pieces of equipment required.

[[COMP: Insert 1.1a] [Designer: this image does not have a number or caption. Please include numbers next to relevant tool – see '1.1a numbers.doc' for reference]]

[[ULF]] **Tailor's chalk** (1){PR: Numbers will need to be cross checked against image when it is available.} Using tailor's chalk is one way of marking lines or transferring a pattern on to cloth.

[[UL]]**Set of three French curves** (2) These are used for drawing narrower curves, such as those found on collars and pockets.

43 cm set square (3) This is a right-angled triangular plate used for drawing lines, particularly at 90 degrees and 45 degrees.

Wooden awl (4) This is used for marking any points within the pattern piece by punching through the pattern to leave a small mark on the fabric.

Pins (5) These are used to temporarily fix pieces of paper or cloth together.

Tape measure (6) An indispensable item, this is used for taking measurements of the body and its flexibility allows curved lines to be measured, too.

Pattern drill (7) This is used for marking things such as darts, pockets and any other marking points within the pattern piece. The pattern drill will punch a hole of $\frac{1}{16}$ {COMP: Use fraction symbol}—3.16 in (2–4 mm) into the pattern. The position of the punch hole can then be marked with chalk or thread on to the fabric.

Pattern notcher (8) This is used for marking the edge of the pattern pieces by taking out a small square for each balance point. This should only be used on pattern paper, thin sheets of plastic or card—not on fabric.

Paper scissors (9) These are—as their name suggests—only used for paper, in order to keep the blades sharp.

Tracing wheel (10) This is used to trace a line from one piece of paper or pattern on to another directly underneath it.

Pattern master (11) This is used to create lines and curves and to check angles.

Fabric Scissors/Shears (12) These scissors or shears are to be used when cutting fabric, again in order to keep the blades sharp

Small Scissors/Snips (13) These are helpful when cutting threads whilst stitching and also can be used to help unpick mistakes. Especially good for very fine and intricate work.

Pencils (not shown) Your pencil can be a mechanical or traditional pencil, but should be no softer than HB. This is to ensure sharp and accurate lines.

Aluminium meter ruler (not shown) This is essential for drawing and connecting longer, straight lines.

Silhouettes

First impressions of an outfit are created by its silhouette—the overall shape created by a garment. Before qualities such as the detail, fabric or texture of the garment can be considered, the silhouette of the garment is an important initial decision in the design and construction process.

The importance of silhouette

Silhouette is fundamental to the preliminary stages of the design process in order to determine which parts of the body will be emphasised and why. Once these decisions are made, it is up to the pattern cutter and designer to start contemplating how the design can be physically constructed and, if necessary, supported and structured using underpinnings and foundations. Many materials and techniques can be used to shape a silhouette (see chapter seven: Support and structure). For example, using shoulder pads to widen the shoulder can create an illusion of a small waist and narrow hips

1.2

1.2 Sculptured ceramic mannequin by Helen Manley.

Proportion and bodylines

Proportion refers to the comparative relations and dimensions of the various parts of a whole outfit. A combination of garments can look messy or can work in harmony. For example, the ways in which a jacket, a skirt and a pair of boots relate to one another will add to the sense of proportion and balance conveyed by the outfit as a whole.

Proportions can be changed fairly easily using various construction methods. For example, moving a hemline, waistline, pocket, seam or dart position can dramatically alter the balance of width and length on an individual body shape. Choice of fabric texture and color can also add to the overall effect conveyed by the cut and shape of a garment.

The change of silhouette over time

[[TXF]]Throughout history, fashion has always reflected the wealth of the nation, the status of individuals and cultural representation over time. See pp. XXX for a more detailed look at the history of supported and structured garments.

{{COMP: Insert 1.3_1800, 1.3_1830, 1.3_1895, 1.3_1900, 1.3_1911, 1.3_1912, 1.3_1920, 1.3_new look} [Please place years under each of illustrations:]1800 1830 1895 1900 1911 1912 1920 New Look, 1947}}

[[CAP]]1.3 The changing shape and proportions of fashion in the Western world over the course of history.

[[H1]]Sizing and grading

[[TXF]]Designs for a garment can be cut and made to fit an individual customer, or they can be graded and altered to fit wearers of differing sizes. Either way, a full and detailed knowledge of sizing and grading is essential for any designer hoping to create a beautifully fitting garment. Being able to translate body proportions to paper and back to a three-dimensional garment takes much practice, and careful attention to detail is important.

{{COMP: Insert 1.4}}

[[CAP]]1.4 A flexible tape measure is essential for the sizing and grading process.

[[H2]]Sizing

[[TXF]]Womenswear sizing is based on measurements of height, bust, waist and hips. In the UK, sizing starts at size 6 and goes up to size 22 (the best-selling sizes are 10, 12 and 14). European sizes start at size 34 (which is equivalent to size 6) and go up to size 52. American equivalents range from a size 2 to 18. However, as the fashion industry becomes increasingly sophisticated and complex, it is becoming much easier to find other size ranges to accompany these, such as petite, tall or half-size.

[[TX]]Menswear sizing is universally made up of a chest measurement for a jacket and a waist and inside leg measurement for trousers. Shirt sizes are given by the neck measurement.

In childrenswear, the principal variable is usually height so sizing is governed mainly by age.

Measurements for each size can be taken from charts in pattern cutting books but, where possible, it is always best to take real measurements from live models.

[[H2]]Grading

[[TXF]]Grading is the process of scaling a pattern to a different size by incrementing important points of the pattern according to a set of given measurements, such as the British Standard sizing chart. Grading is a very specialized area in pattern cutting that not many professionals master. The secret is to know where the pattern needs changing to fit the decrease and increase in body size. Such increments can vary from $1\frac{3}{16}$ ({{COMP: use fraction symbol}}) to 2 in (3 to 5 cm), depending on the garment range.

Many manufacturers use the British Standard sizing chart, which was first established in the 1950s and has changed over the years to accommodate changes in lifestyle. The United States has its own sizing chart, and many other nations have worked out standard sizing for their own needs. Factors such as culture and diet have great influence on a country's average body shape. For example, northern European body shapes are generally tall and large, whereas the average body shape in the Far East is shorter in height and slimmer in stature. For these reasons, a design house must always carefully consider the market it wants to sell to.

When grading a pattern, make sure that all corresponding seams, notches and punch marks match before starting the grading process. Grading can be done by hand with a metric grader's set square, pattern master or an L-square ruler, as well as by computer using a specific program, such as Lectra or Gerber.

1.5

1.5 Technical drawing of a graded pattern piece.

Taking measurements

Neck girth (1) This is the measurement around the base of the neckline.

Shoulder length (2) This is measured from the neckline to end of shoulder bone.

Top bust girth (3) This is measured around the body, under the arm but above the bust in a horizontal line.

Bust girth (4) This is measured around the fullest point of the bust in a horizontal line.

Under bust girth (5) This is measured around the rib cage under the bust in a horizontal line.

Waist girth (6) This is the measurement around the narrowest part of the waist (natural waistline) in a horizontal line.

High hip girth (7) This is measured around the abdomen about 8–10 cm (3–4 in) below the waistline in a horizontal line.

Hip girth (8) This is the measurement around the fullest part of the hip in a horizontal line.

Arm length (9) This is measured from shoulder point, past the elbow, down to the wrist with the arm slightly bent.

Front length (10) This is measured from the shoulder/neckline cross point, past the nipple and down to the natural waistline.

1.5a

Back length (11) This is measured from the nape of the neck to the natural waistline.

Waist to hip (12) This is the distance between the natural waistline and the fullest point of the hipline.

Waist to knee (13) This is the distance between the natural waistline and the knee.

Outside leg (14) This is the distance from the natural waistline to the floor or outside ankle.

Inside leg (15) This is the distance from the inside crotch to the floor or inside ankle.

Bicep (16) This is the measurement around the top of the arm.

Elbow (17) This is measured around the width of the elbow.

Wrist girth (18) This is measured around the width of the wrist.

{{COMP: Insert 1.5b}} [Designer: this image does not have a number or caption. Please add same measurement lines as shown in '1.5b lines']

{{Box out}}

[[B1T]]Taking measurements

[[B1TX]]When taking measurements, make sure that the tape is neither too loose nor too tight around the body.

There are many more measurements that can be taken. If you are constructing a shirt with a tight fitted sleeve, for example, the measurements of the bicep (16), elbow (17) and wrist (18) also need to be taken into consideration. This is to avoid the fit being too tight or too loose on the arms.

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[[H1]]Blocks and patterns

[[TXF]]Blocks and patterns enable the designer to render something flat (paper or fabric) into something three-dimensional. They are laid on to fabric, cut out and assembled together using seams. In order to create well-made garments, it is essential that the designer fully understands the techniques used in order to make pattern cutting as straightforward and accurate as possible.

[[H2]] The block

[[TXF]]A block (also known as a sloper) is a two-dimensional template for a basic garment form (for example, a bodice shape or fitted skirt) that can be modified into a more elaborate design. Blocks are constructed using measurements taken from a size chart or a live model and do not show any style lines or seam allowance.

[[TX]]Blocks must, however, include basic amounts of allowance for ease and comfort; for instance, a tight-fitting bodice block would not have as much allowance added into the construction as a block for an outerwear garment might. A fitted bodice block would also have darts added into the draft to shape the garment to the waist and bust, whereas a block for a loose-fitting overcoat would not need these.

{{COMP: Insert 1.6}}

[[CAP]]1.6 A sample skirt block.

[[H2]]The pattern

[[TXF]]A pattern is developed from a design sketch using a block. The designer or pattern cutter will add to the block by introducing style lines, drapes, pleats, pockets and other adjustments to create an original pattern.

[[TX]]The final pattern features a series of different shaped pieces of paper that are traced on to fabric and then cut out, before being seamed together to create a three-dimensional garment. Each pattern piece contains “notches” or points that correspond to a point on the adjoining pattern piece, enabling whoever is making the garment to join the seams together accurately. The pieces need to fit together precisely; otherwise the garment will not look right when sewn together, and it will not fit well on the body.

When the block modification is finished, seam allowance is added to the pattern. To perfect a pattern, a toile (a garment made out of a cheap fabric such as calico) is made and fitted on to a live fitting model. Adjustments can be made on the toile before being transferred to the pattern. This stage is examined in more detail on [p. XX](#).

{{COMP: Insert 1.7}}

[[CAP]]1.7 The translation to pattern.

{{Box out}}

[[B1T]]Samples

[[B1TX]]A sample is the first version of a garment made in real fabric. It is this garment that goes on the catwalk or into a press/showroom. Samples are produced for womenswear in sizes 8–10 (6–8 US) to fit the models. Once the sale book is closed, the samples are stored in the company's archive. Some samples of past collections are taken out by designers for photo shoots, events such as premieres and for reference or possible inspiration for future collections.

{{End box out}}

[[H2]]How the measurements relate to the block

{{COMP: Insert 1.7a and 1.8} [Designer: these two images are to appear together with one figure number and caption. Please add same measurement lines as shown in '1.7a lines' and '1.8 lines']}

[[CAP]]1.8 The block and its corresponding measurements.

[[TXF]]Whether taking individual measurements or using a size chart, the main measurements (bust girth, waist girth, waist-to-hip length and hip girth) will give a good indication of the body shape the design is intended to fit.

Secondary measurements may also be taken from an individual or from a size chart. This may be the length of skirt, for example, when drafting a skirt block.

Darts can be used to control excess fabric and to create shape on a garment when stitched together. Curves are added to create shape depending on the nature and purpose of the block.

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[[B1T]]How to start a set of blocks

[[B1TX]]A set of blocks can be cut for one individual in order to create bespoke/couture garments. Design houses will often create their own set of blocks to complement their special ethos and design philosophy. When starting a set of blocks, it may help to ask the following questions:

[[B1_ULF]]What is my target group: women, children or men?

[[B1_UL]]What will be the smallest and the largest size in my size chart?

What is my sample size?

[[B1ULL]]What is my collection range: lingerie, tailoring, streetwear?

[[B1TX]]The answers to these questions will make it much easier to cut the right blocks from which to create original patterns for each collection.

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[[H1]]Inspired practitioners

{{COMP: Insert 1.8a}}

Martine Rose, Menswear Designer{{ED/COMP: There are no codes available for interviews, but my guess is that what is bf here should be left as is, all lines should be flush left.}}

What is your approach to design?

I start with a sense of what I would like to develop, a mood, a feeling and then I start to research around this collecting imagery to bring the story together. There tends to be an over-all subject, but sometimes the imagery can reflect more about color or mood than actual pieces. In addition to this, I also source vintage pieces around this theme that I will use as a foundation to build upon. From that

point, I start with an overall silhouette that I would like to work upon, and start work in more detail on the pieces themselves.

How important is the construction process in the way you work?

Construction is very important, as I tend to explore proportion and volume a lot. The construction allows me to exaggerate these whilst still being functional and wearable.

Where do you begin with material research?

The direction is largely dictated to by the research, season and the pieces I source. Then it often starts with suppliers I know that have the fabric that I am looking for or similar—often it will throw up some surprises.

Being a menswear designer, how do you balance detail with innovation of shape?

That's the toughest part—traditional menswear is really focused on the detail, small changes to pockets, cut etc. However, my approach is far more rooted in the sense of proportion and this will often involve the detail. It is extremely important, however, in menswear that the garment is completely functional and works with the same convenience and ease that a traditional piece would.

Any advice for any aspiring designers?

Go for it, follow your instincts trust them, be brave and get a good accountant.

[[H1]]Task

[[H2]]Getting started: blocks, measurements, machinery

[[NLF]]1. Get a feel for your tools and practice how to use them. Try the following:

- [[BLF]]Draw straight continuous lines with your pattern master or set square.
- [[BL]]Add $\frac{3}{8}$ in (1 cm), $\frac{1}{4}$ in (0.7 cm) and $\frac{3}{16}$ in (0.5 cm) seam allowance to these lines.
- Draw curves and circles using your pattern master and French curves.
- [[BLL]]Trace some of these shapes out onto fresh pattern paper and using the marks to draw new lines.

[[COMP: Insert 1.9]]

[[CAP]]1.9 Practicing drawing lines with a pattern master.

[[NL]]2. Consider who your target audience is and create a set of blocks. Take your measurements from a live model. Create the following with no seam allowance (also known as NSA):

- [[BLF]]A close fitting block
- [[BL]]An overgarment block
- [[BLL]]A trouser block

Once checked and corrected, transfer these blocks to cards and keep as templates for following exercises and for future use.

[[COMP: Insert 1.10]]

[[CAP]]1.10 Taking measurements of the body.

[[NLL]]3. Familiarize yourself with an industrial or domestic sewing machine. Ensure you have the correct bobbin and machine feet for your machine. Practice the following:

- [[BLF]]Sewing in straight lines
- [[BL]]Sewing in curves and circles

- [[BLL]]Changing stitch length and also test tension

[[COMP: Insert 1.11]]

[[CAP]]1.11 Threading up an industrial sewing machine.