

No Waste Allowed

Get to know this amazing, planet-friendly design approach

BY SANDRA ERICSON

In a time of economic hardship the world over, our efforts to act responsibly have started to reset our lifestyles. This new reality is producing some innovative and very positive changes in the marketplace and in garment design.

However the mother of invention directs us, the logic of preventing waste—whether it is on the factory floor or in our closets—is compelling and becoming even more important today as we learn new

an exciting twist to garment creation. We'll look back at past solutions; examine what's happening in present-day garment production; and then take a peek at the zero-waste solution that's taking hold.

THRIFTY PATRIOTISM

History is filled with examples of thrifty fabric saving. Anything from sacred cloth to a sewer's "stash"—which may contain scraps of everything he or she ever made—

the cloth; small triangles became gussets and pockets, selvages became edges, and warp ends became fringed trim.

During the industrial revolution and most of the 20th century, much textile waste was returned to the fiber stage and felted. The Textile Identification Act of 1968 required manufacturers to tell the public when waste was being recycled by labelling it "reused." Naturally, the idea was less successful with clothing since

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ways to stretch our resources. The effort not only impacts the fashion, manufacturing, and recycling industries but even our home-sewing sensibilities as well. This isn't the first time we've had to watch our consumption. We have a history of rationing in war time and rallying through the lean times. Here, I'll introduce you to a growing new movement aimed at designing without creating waste, which is adding

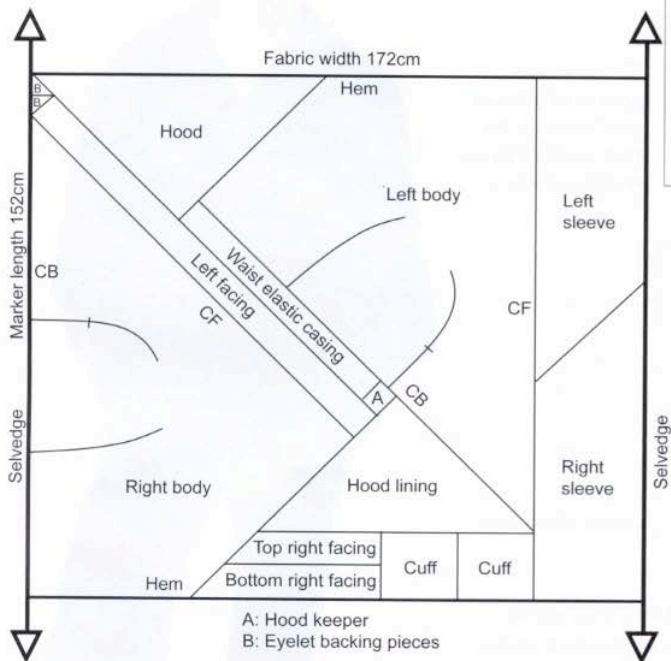
has been saved for a quilt or a pieced garment to make someday.

Throughout time, when fabric was simply too rare to waste, too culturally prized, or its making was too labor intensive, eliminating fabric waste was planned into the design and became just as much a point of pride as the resulting garment.

Early weavers in every culture designed garments to efficiently employ each cut in

consumers assumed it was unsanitary. Most of these fibers went into making typewriter pads and other products; only "virgin wool" was used for clothing.

While many people from large families remember recutting clothing for the younger children, it wasn't until the advent of war rationing that people became eager to recut entire men's suits into ladies' suits and children's wear.



The design of the hooded jacket at right by Timo Rissanen makes use of every morsel of fabric, so there are no scraps. The pattern at left was created with this end result in mind.

Instructional pamphlets circulated by the Roosevelt administration, such as *Make and Mend for Victory* (The Spool Cotton Company, 1942), promoted this popular, patriotic activity. The aforementioned booklet opened with the following pledge to encourage large-scale conservation:

CONSUMER'S VICTORY PLEDGE:

As a consumer, in the total defense of democracy, I will do my part to make my home, my community, my country ready, efficient, strong.

I will buy carefully—and I will not buy anything above the ceiling price, no matter how much I may want it.

I will take good care of the things I have—and I will not buy anything made from vital war materials which I can get along without.

I will waste nothing—and I will take care to salvage everything needed to win the war.

—Consumer Division,
Office of Price Administration

These booklets contained exact instructions and cutting layouts, including cleaning and even fashion tips for the chic set.

DESIGN THE PATTERN, NOT THE CLOTHING

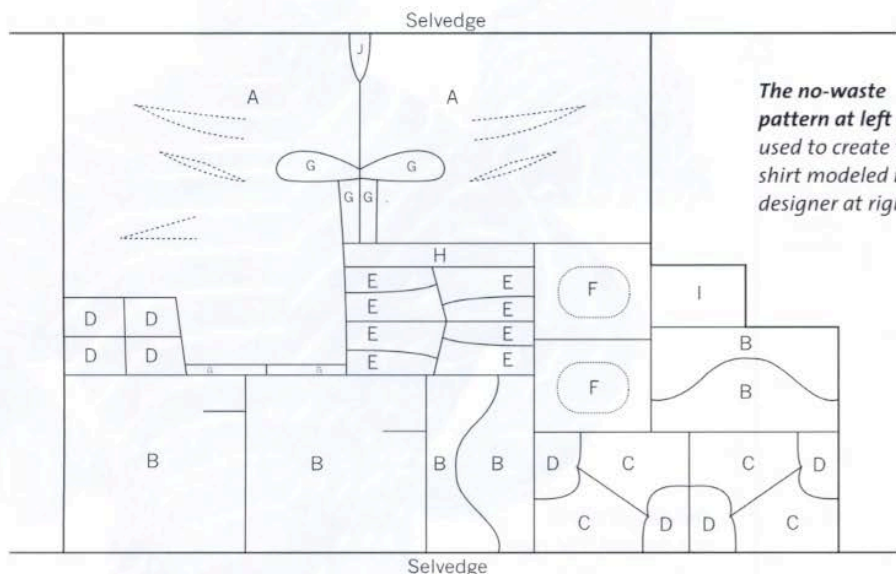
For a more “glass half full” point of view, most recently in the high fashion spotlight, a whole new genre of designers has appeared—the “Zero Waste” crowd. They’re not asking you to ration fabric; just don’t send it to the landfill. They’re the latest graduates emerging from design schools and even university PhD programs. Many in this group focus on the design of the pattern, not the design of the clothing.

Fashion design is “out,” and creatively designing the pattern with little or no waste is “in.” In fact, the design process starts with the pattern, not with a sketch. The surprise is the resulting garments don’t appear to come from a point of thrift in any way—they are dramatic, exciting, and luxurious.

ELIMINATE CUTTING-ROOM WASTE

A zero-waste design means its production produces no scraps. For example, the resurgence of knitting has gained major status, and it produces no waste. High fashion has embraced its success, and full-fashioned knitted couture now populates many catwalks.

So what’s going on in the contemporary Zero Waste movement and who is doing what? Timo Rissanen (ZeroFabricWasteFashion.blogspot.com) from Australia, a PhD candidate at the University of Technology in Sydney, who is teaching at Parsons in New York City for the 2010 spring semester, brings new focus to the relationship between the fashion designer and the patternmaker, making it a collaborative partnership. His designs and patterns are shown above and on page 62. From London, there is Mark Liu (Stique.com) doing the Jigsaw Cut and Julian Roberts (Juliand.com) with his many variations of Subtraction Cutting—both completely different



The no-waste pattern at left was used to create the shirt modeled by its designer at right.



Using creative techniques to add shape and detail to zero waste designs, designer Timo Rissanen (shown above) uses natural details, such as the selvage edge from the fabric in his garments. On the pants below, tucking, venting, and gussets make a useful and comfortable garment.

applications of the zero-waste principle. In New Zealand, Holly McQuillan (PrecariousDesign.wordpress.com), a PhD candidate from Massey University is doing a very unusual variation, using hyperbolic tessellation—an intricate tiling of patterns based on geometry—and abstracting photographs to produce her pattern designs. Each of these designers has eliminated cutting-room waste through clever design.

MANUFACTURING MAKES ZERO WASTE ITS GOAL

While it is quite admirable to be able to capitalize on green practices for the studio designer, it's still an elusive industry goal for production houses. But there are reasons why it's becoming increasingly important to do so.

It's estimated that the garment industry is responsible for 7 percent of world carbon emissions. Of the fabrics used to produce clothing, 15 to 20 percent goes into landfills or is otherwise discarded. In addition to overloading landfills, expensive resources in the fuel and labor used to manufacture, pack, ship, collect, store, and truck away that scrap is also wasted, not to mention the resulting more carbon emissions that contribute to global warming.

While the sum total of fabric waste varies, depending on the product and location, it's a staggering amount of waste year after year all over the world—and much of it isn't the product of necessity.

Add to that, the clothing that's produced within this system and discarded before its time. It's unused, unworn, and so abundant that even developing countries are now refusing the bales of semi-used clothing coming from the U.S. because there's nowhere to put it.

The Council for Textile Recycling estimates that 2.5 billion pounds of post-consumer textile waste (which includes anything made of fabric) is thus collected by the thrift-shop industry and prevented from entering directly into the waste stream. This represents 10 pounds for every person in the United States, but it's still only about 15 percent of the clothing that is discarded. The world supply of used women's clothing is at least seven times that of men's. And, these statistics are getting worse.

If true fashion reflects the zeitgeist of the times, our clothing should increasingly reflect the global reality of declining resources. The good news is that the sustainable fashion industry is steadily building the infrastructure it needs to





Waste is expensive everywhere, but at textile-manufacturing facilities, such as this factory in Dhaka, Bangladesh, excessive waste becomes an economic, moral, and ethical concern.

both source and process without waste, making the zero-waste production line its ultimate goal. Such realities need not mean bog coats for everyone. Gorgeous and exciting fashion can also be ethical—one way is through thoughtful design and manufacturing. For more on sustainable fashion, the Web site CentreForSustainableFashion.wordpress.com is a great place to start.

WASTE NOT, WANT NOT

To begin to apply these practices to your own production—whether you're designing on a personal or commercial scale—

used by weavers to avoid cutting into their masterpiece while at the same time fitting the figure.

Study the contemporary work of the leading proponents mentioned here, and notice how they use layering and folding to employ every cut piece. They design new garment parts on the spot to use the scrap pieces. They aren't working from the traditional body-based pattern pieces but from the shape of the cut cloth itself. They see the garment design holistically, from the two-dimensional layout, they piece, shape, and turn upside down; they stitch distant garment parts and planes together,

they can with fabric in the hand—mixing the two methods in one creation. They are the pioneers.

There are even more amazing applications in zero waste coming along. It's becoming possible to “manufacture” shape in clothing—clothing that's molded under pressure, designed with solar-based heat, 3-D textiles, carbon fibers and knits with no seams. The Textile Clothing Technology Corporation (TC2.com) in Cary, North Carolina, is the think tank of the garment industry in this country and pushes constantly for scientific and production breakthroughs that enable and increase responsible profitability in the United States and elsewhere, getting us ever closer to textile production without any leftovers.

The point here isn't to save fabric; it's to eliminate waste. That's the culprit that runs costs up and threatens our planet. The proactive solution is to design for zero waste, so think about how you can approach creating garments in this manner in your own sewing and cutting down waste.

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first think of applications of zero-waste that have been done for aeons. Vionnet's bias cut, using a single large rectangle, for instance, involves no cutting, and no waste. In her book, *A Cut Above: Couture Clothing for Fibre Artists* (V. West, 1992), Virginia M. West gives us many layouts

cut holes, unravel, unweave, and felt—all with a plan to create no waste.

It's the ability to plan such a multi-dimensional piece that elevates their work to the fashion stratosphere. These designers are of the computer generation and can design as much with CAD as

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