

# cover

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CARPETS & TEXTILES FOR MODERN INTERIORS



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# Loomy tunes

“

The music dictates pattern, palette and weight; a bass-heavy track becomes a dense, dark fabric”

01 Dubcut, polyester fabric, BeatWoven

02 Fabrics from the Made to Measure project by Glithero, commissioned by the Zuiderzee Museum, Enkhuizen

What links street organs, mechanical looms, contemporary art and the daughter of Lord Byron? **Denna Jones** investigates the phenomenon of 'woven music'

It was Ada Lovelace, daughter of the 'mad, bad and dangerous to know' Lord Byron, who showed how seemingly prosaic punched cards could create music and woven textiles. Twenty-first-century designers Glithero (Sarah van Gameren and Tim Simpson), and BeatWoven (Nadia-Anne Ricketts) are legatees of Lovelace's early computer theories. Combining her discovery with the computational processes of the 18th-century mechanical Jacquard loom, they design 'woven music'.

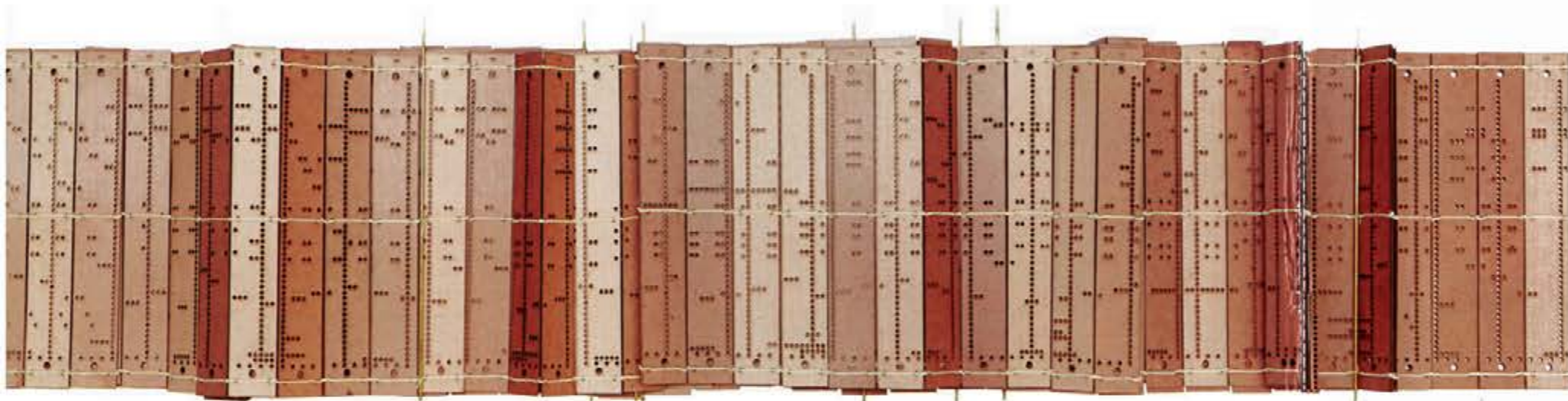
Described as 'the Enchantress of Numbers', Lovelace (1815–1852) was the founder of modern scientific computing. She understood the computational significance of Charles Babbage's Analytical Engine, and that a punched card input device would allow his engine to calculate symbols as well as numbers. She predicted music might be an eventual outcome of the punched card system. 'Supposing,' she wrote, 'that the fundamental relations of pitched sounds in the science of harmony and of musical composition were susceptible of such expression and adaptations, the engine might compose elaborate and scientific pieces of music of any degree of complexity or extent.' She set in motion the field of computer software programming, and correctly prognosticated the essential computerised element of the weave methodology of Glithero and Ricketts.

#### Telling stories

Glithero was commissioned in 2013 by the Zuiderzee Museum's annual thematic programme for artists and designers to develop a project around 'immaterial heritage'. The term designates intangible and informal teachings susceptible to loss because they are learnt outside a formal school system: stories, folklore, skills and crafts.

Sarah van Gameren (Dutch) and Tim Simpson (British)





03 The Made to Measure project by Glithero for the Zuiderzee Museum, Enkhuizen. This image illustrates the organ punch card from street organ music manufacturer Leon van Leeuwen, alongside the loom punch card and the fabric that resulted from the patterns of the cards above.



focus on what they call 'time and transformation', and the sweet spot or tipping point where process becomes outcome. For the Zuiderzee commission Made to Measure, Glithero skipped nostalgia and looked for a 'modern, philosophical translation' of heritage crafts. They use parallel stories of two craftsmen who represent trades with remarkably similar methods of production: street organ music manufacturer Leon van Leeuwen and skilled weaver Will van den Broek. The production process of each trade requires a sequence of holes punched in cards and in 'jacquards', thin wooden or card slats. The cards and jacquards inform the behaviour of the machines into which they feed. Each hole is responsible for a sequential command that causes Van Leeuwen's machine (the organ) to make music and Van den Broek's (the loom) to weave textiles.

Bill Morrow of Langhorne Carpet Company in Pennsylvania says its mechanical Jacquard looms are 'basically a punch-card system', akin to a player piano. Langhorne's looms can vary pile height, in a way that relates to the five-line staff on sheet music. Glithero was curious to find out if the pattern of an organ punch card could be used as input for a loom. Could one discipline translate to the other to 'weave music'? Visitors to the Zuiderzee Museum can discover the answer during the Made to Measure spring 2014 exhibition.

#### Patterns and repetitions

Glithero's short promotional film *Woven Song* uses a split screen to show the masters at work, one punching the card for the organ's music, the other stitching together the narrow punched slats for the mechanical loom. It is scored with jaunty music redolent of the callopie, an organ that can be driven by steam. It can be run mechanically with a punched roll used for player pianos and organs like Van Leeuwen's, or digitally driven via MIDI (Musical Instrument Digital Interface); the latter process most closely mirrors that of 'music weaver' Nadia-Anne Ricketts.

Ricketts danced professionally for a decade, then immersed herself in the Ibiza club scene before attending Central Saint Martins College of Art and Design, London, to study weaving. She saw the connection between a digital music file and the binary code used to control a Jacquard loom.

Ricketts defines Jacquard as a 'middle point between print and weave', which she says facilitates her process. With computer software writer Matt Brown she developed a program to translate an MP3 file into weave. The broken-down sound waves can map every sound frequency, rhythm and amplitude, allowing innumerable weave patterns. Her music of choice ('house') dictates pattern, palette and fabric weight; for example, a bass-heavy track becomes a dense, dark fabric.

Appreciation of her textiles relies on her audience understanding the process, which led her to ask *Crafts* magazine, 'How are people going to know I'm weaving a song?' However, she is developing a video to demonstrate the process.

While woven music is central to Glithero's and Ricketts' projects, music from the loom factory has inspired its own art. Artist Senga Nengudi is known for performance work involving the body and movement. While in residence at the Fabric Workshop and Museum in Philadelphia, she created a work with composer Butch Morris. Repetition and near repetition are important elements of music composition and, when Nengudi visited Langhorne Carpet and Scalmandré, she was inspired by the mechanical Jacquard factory floor and the repetitions of its mill sounds. She recorded video and sound and collected hundreds of jacquard cards. Morris used these to create a composition for her video and installation: *Warp Trance*.

Glithero and Ricketts may not be producing a revolution on the dance floor but, like long-ago Ada Lovelace, they hope to revolutionise the mechanics of loomed music.

[www.glithero.com](http://www.glithero.com)  
[www.beatwoven.co.uk](http://www.beatwoven.co.uk)