





Moving to polymer

The transition of the Bank of England polymer banknotes began with the £5 in 2016, with a desire to be *"cleaner, securer and greener"* than the previous paper banknotes. This was followed by the £10 in 2017 and will complete by the transition of the £50 in 2021.

The Bank has stated that the case for moving to polymer banknotes remains compelling when considering factors such as the challenges to counterfeit the banknote and the lower carbon footprint over the lifetime of the banknotes, as certified by the Carbon Trust. Since their transition to polymer their replacement rates (i.e. the percentage of banknotes in circulation replaced because they are no longer considered to be "fit" for circulation) has dropped.



Specifying requirements



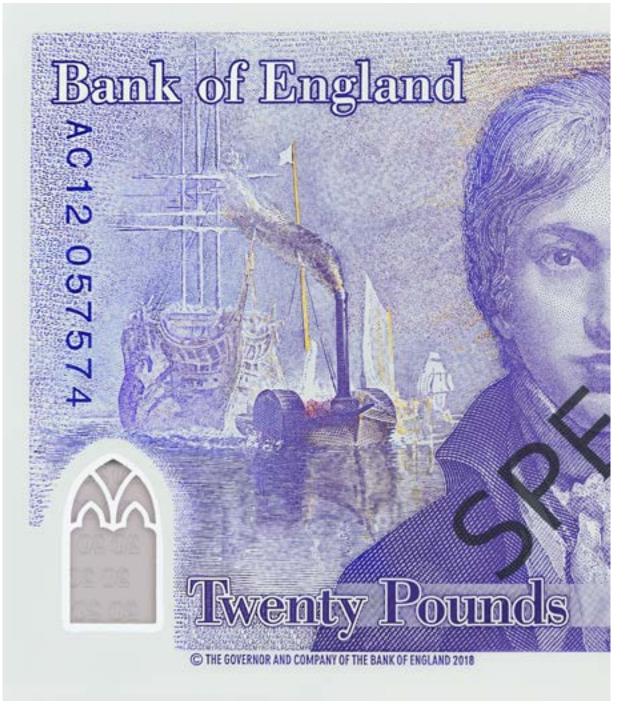
De La Rue launched SAFEGUARD[®] in 2012 and started their *"£20 challenge"* project in 2014, to enable it to complete the rigorous qualification process and to go on to be awarded a tenyear contract to supply SAFEGUARD[®] for the £20 in 2017. The *"£20 challenge"* includedthe development of a tool to quantify the environmental impact of transitioning to polymer, business continuity planning and ensuring that lessons learnt from recent production of the £5 had been incorporated into the design of the £20.

De La Rue worked with the Bank to find a sustainable recycling solution for the polymer banknotes. During this time the SAFEGUARD[®] substrate was developed further focussing on two main technical areas. Dr Alice Mesnage, Senior Scientist Polymer Gravure & Print describes these developments *"Firstly the team had to enhance the processability of the substrate at speed through print processes. Secondly the adhesion of the coloured foil to the SAFEGUARD[®] substrate had to be optimised to meet durability requirements."*

Design Story

The creative design team of De La Rue began work before J. M. W. Turner was even announced as the figure to appear on the £20 polymer banknote. The Bank of England Banknote Character Advisory Committee had selected the visual arts field and received, via its new character selection process, 29,701 nominations covering 590 eligible characters. As the options began to narrow down De La Rue designers researched the lives, places of residence and places of work of the potential figures. Securely stored in the archives of De La Rue are concept designs for figures who may never feature on a banknote.

Once J. M. W. Turner was selected the design team worked on several Turner concepts, aiming to create a note that ensured public confidence and gave pleasure from the detailed design work celebrating Turner's art and life. *"Our aim was to remain true to the beauty and magnificence of the Fighting Temeraire painting and the spirit of Turner's work"* said Jan Kercher, De La Rue Design Realisation Manager. Atmospheric washes of paint are used to portray the painter of light and great care was taken to be true to the painting and the spirit of Turner's age. The big central litho pattern on the front of the design is based on the leaded roof tiles above the domed entrance to the National Gallery.



Features

There are some points worth noting about the aesthetics of the £20. Firstly, it is the first Bank of England polymer banknote to have two windows. The large window is outlined with a purple colour and based on the shape of the fountains in Trafalgar Square, with a blue and gold foil in the middle. The smaller window is based on the arch at Tintern Abbey where Turner often painted. The front of the note contains an illustration of the Bank of England, produced via three workings for the first time in order to provide additional depth and clarity. On the back of the banknote is a selfportrait of J. M. W. Turner, currently on display in Tate Britain. The colourful sunset to the right of Turner is true to the original painting and took a few iterations to perfectly capture the vibrancy of colour. To the left of Turner is one of his most eminent paintings, "The Fighting Temeraire", which shows a steam ship towing the ghostly old HMS Temeraire into retirement and is often seen as a metaphor for the progress of the industrial age. "Great care was taken to ensure that the ghostly presence of the Temeraire was apparent" said Steve Pond, Senior Currency Design, going on to describe the banknote as *"a masterpiece in your* pocket."



Function and form

As well as aesthetics, the note design had to be functional for the modern cash cycle, for instance featuring a special tactile feature for the visually impaired. It also had to be secure, with the design team incorporating several overt and covert security features to mitigate the threat of counterfeiting and enable the £20 to function securely throughout every part of the cash cycle. Jan emphasises that *"All the shapes have a meaning and purpose and relate to Turner, everything featured is functional, designed for manufacture and also aesthetically pleasing."*

Once the concepts were approved the design process moved onto technical design, which bought together engraving, pattern work and graphics. Multiple options were provided for the pattern work and then the preferred options were worked up in more detail. Knowledge and experience gained from printing the £5 and £10 banknote was fed into the process to optimise the design of the £20 as it moved towards production. Marc Delorie, Technical Designer, shares one example: *"a distinct style of engraving was used, incorporating more 'break whites' to break up the lines, knowing that the ink would flow and fill in* the gaps from the experience of printing the £10."

Overall several proofs were carried out to tweak the design and optimise the aesthetics and colours prior to trial production runs (zero production runs) and final production of finished banknotes throughout 2019.

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> > Jan Kercher, Design Realisation Manager



De La Rue is honoured to have worked closely with the Bank of England on the design, origination and production of the polymer £20. Clive Vacher, CEO, summarises "the new polymer £20 note provides industry-leading security inside a true work of art. It continues the partnership between the Bank and DLR that stretches back many years and grows even stronger with every new project."

Our market-leading Currency Division provides banknote security features, polymer substrate and fully finished banknotes to central banks, banknote issuing authorities and state printing works around the world.

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