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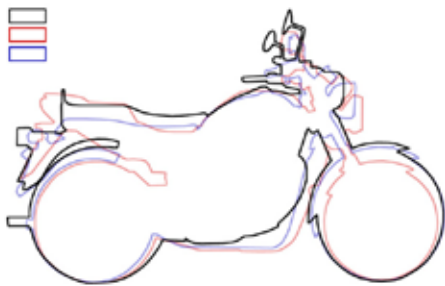


### Market Segment Analysis

The design team conduct research to learn about, or refresh their knowledge of, the target market segment. This includes information on market size, key players, consumer demographic and market trends.

Findings are communicated in both reports and illustrative graphics.

2



### Comparative Product Analysis

An evaluation of main competitor products. A detailed bench marking process is conducted which catalogues the strengths and weaknesses of competitor products.

- Aesthetic Qualities
- Performance
- Materials & Manufacturing Processes
- Market Share

3



### Target Consumer Profiling

Utilising both new and existing market research the design team define the target consumer and their characteristics:

- gender
- age range
- likes/dislikes
- aspirations
- socio-economic demographic etc.

4



### Feasibility Report

A report compiling all of the design teams findings from the prior research stages and detailing recommendations for new product development. The objective at this stage is not to write the design brief but instead create a specification based on available opportunity and capability.

5

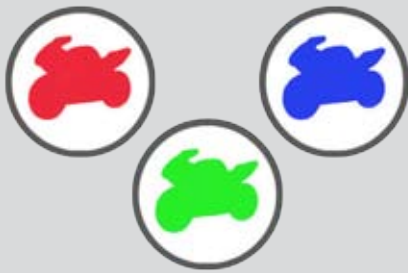


### Design Brief Creation

A written brief serves as a framework for the efforts and decisions of the design team and acts as an essential point of reference for all interested parties.

The process centres around the 'House of Quality' Quality Function Deployment (QFD) Diagram which illustrates a relationship matrix. This Matrix translates individual customer needs into specific design requirements in a systematic step-by-step approach.

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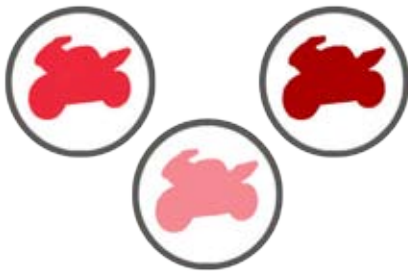


### Concept Generation

Sketches are used to structure and understand a problem, as well as generate and explore solutions; functions and forms. Drawn quickly with a loose style these sketches allow for many solutions to be tried out and evaluated.

- 1st Sketch Check:  
Several distinctive concept directions are presented and discussed. One is selected for further development.

2



### Concept Refinement

Explanatory sketches are created to explain function, structure and form in a clear and neutral manner for users and clients to evaluate. Particular attention is paid to human factors and packaging throughout this stage of the design process.

- 2nd Sketch Check:  
3 distinctive versions of the concept are presented and discussed. One Finalist is selected for conclusion.

3



### Concept Refinement

Evolved finalist complete with details and components is presented and discussed. Persuasive renderings go further than explanatory sketches in that they not only explain the product in a very resolved manner, but are also drawn to capture the imagination of the target audience and sell the design concept. Final opportunity for major revisions.

- Final Sketch Check

4



### Packaging

1:1 scale 'key line' drawing is made in preparation for the model stage. This allows final packaging issues to be addressed and translated into templates ready for the transition into 3D.

5



### Final Design Presentation

Complete 2D design is presented.

1



### Prep for Clay

Acquire client supplied parts eg. rolling chassis & common components, engine etc.

This is then set up along a centreline for accurate translation and symmetry later in the modelling process.

2



### Clay packing & Initial form generation

Fundamental volumes are built up and model starts to take form.

- First Model Check:  
Review of the models progress to confirm size, proportions, ergonomics etc.

3



### Surface Development

Volumes and surfaces are developed and refined as the model approaches it's final form. Typically one side is developed first, though each side can sometimes be developed as alternative options for appraisal.

- Second Clay Check:  
One side 90% complete for discussion.

4



### Surface Finishing

Final changes are made and symmetry is achieved from the approved side agreed as a result of second clay check.

Surfaces & details are refined and finished.

Colour differentiation is applied in the form of black paint/ tape and films to demonstrate breaks in form and change of material/texture.

5



### Stop Clay & Digitisation

Complete model is ready for presentation, discussion, photography etc.

Model is digitised by Photogrammetry/laser scanning to preserve form in virtual environment for downstream development and reference.

1



### Moulding of Clay

A series of female splash moulds are produced from the finished clay. These are produced using a synthetic Gypsum system called Polydur. Depending on the complexity of the design it may be necessary to produce multi-piece moulds.

A full set of GRP parts are then taken from the moulds.

2



### Hard Modelling

Individual parts are hand worked and developed into final hard parts ready for assembly. This includes addition of flanges, mounting points, bracketry etc.

Manufacture outsourced where necessary.

3



### CAD & RP Components

Digitised point-cloud data is surfaced and developed into solid models for rapid prototyping of complex components.

Parts are produced by CNC, SLA and Vacuum Casting depending on the application and numbers required.

4



### Pre-Finish Assembly Check

All bracketry is finalised and fitted to the frame.

All complete hard parts are assembled to ensure high quality of fit before final surface finishes are applied.

5



### Finish & Final Assembly

All final surface finishes are applied and finished parts assembled to create the final show model for presentation to management, consumer focus groups etc.