

Maintenance manual.

## SUMMARY

Document type: B.3 action example process layout deliverable  
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# ecoRaee



## 1. Summary of the B.3 action and the corresponding deliverable

This deliverable, entitled **Maintenance Manual**, corresponds to the B.3 *example process layout*, within the *ecoRaeE project: Example of a WEEE reuse process to promote standards pursuant to European regulations, financed by the Life programme (LIFE 11 ENV/ES/574)*.

The manual firstly offers a description of the design, manufacture, assembly and start-up of the work island prototype(s) on which the WEEE recycling and reuse activities are performed, as set out in the deliverable corresponding to the B.2 action. Similarly, the **Final Appendix** to this deliverable sets out the various maintenance operations to be carried out on these islands in order to ensure that they remain operational for the duration of the project.

Responsibility for the design of the layout of these prototype islands has fallen to the CIMA Group (the Spanish acronym for the Centre for Mechanical and Automotive Engineering) at the Universidade de Vigo. These islands will be the location for the operations required to reuse and recycle WEEE (as described in the B.2 action) in order to obtain reusable equipment and components in the various example processes (as described in the B.4 action).

## 2. Definition of the installation: prototype island(s) for WEEE reuse/recycling

The conceptual design of the prototype island layout, on which all the predefined tasks required for WEEE reuse and recycling are performed, is based on carrying out the conceptual sequence of operations illustrated in Figure 1.



Figure 1. Conceptual sequence of the WEEE reuse and recycling process

On this basis, a number of island concepts were defined. Firstly, this focused on the tasks themselves with the operator(s) in question around them (Figure 2, top). Secondly, in order to optimise space and speed up operation times, an operator-based model, with the operator at the centre of the process surrounded by the operations, was decided upon (Figure 2, bottom).

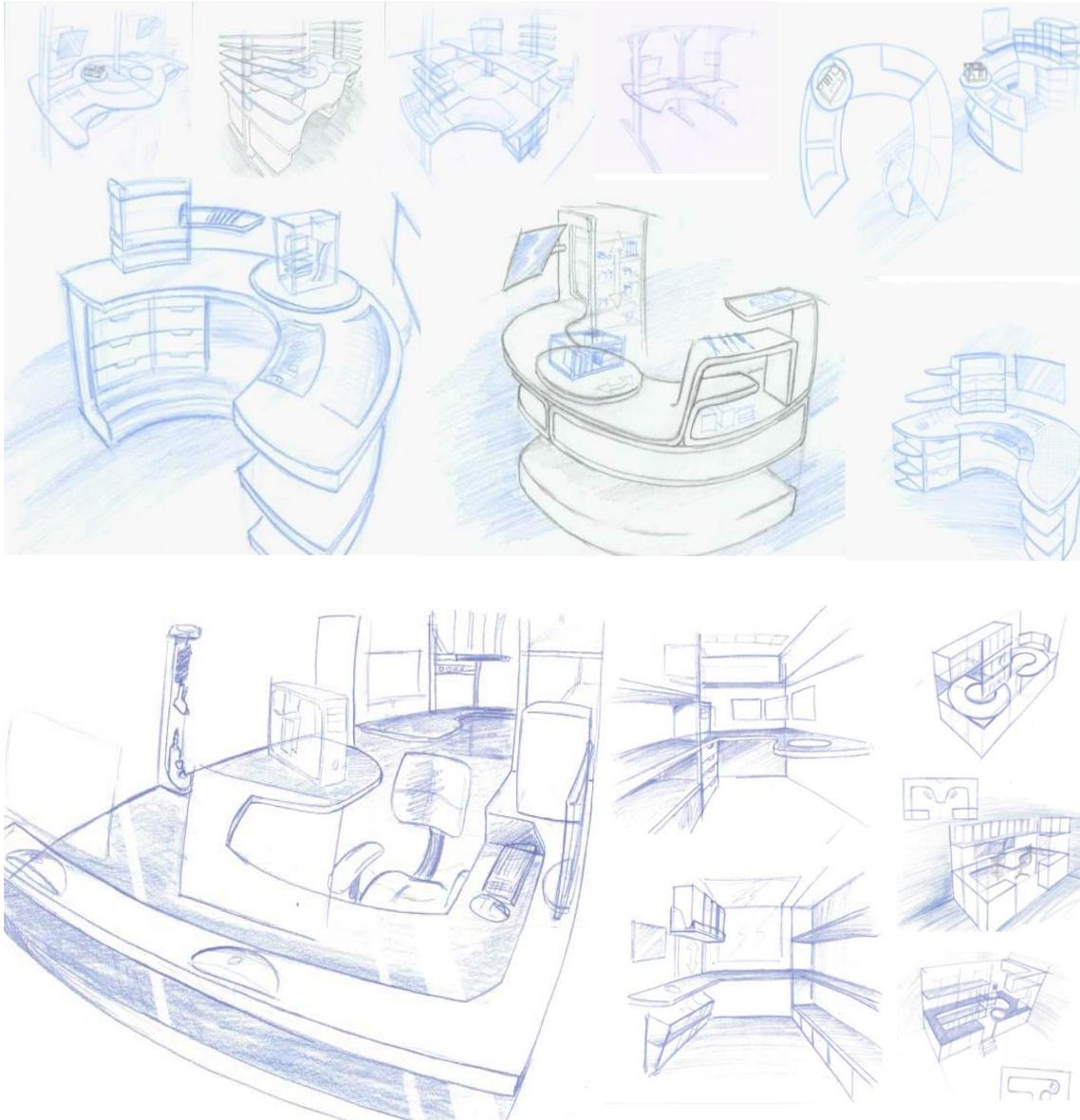


Figure 2. Concepts defined for the work islands and WEEE processing: initial (above) and final (below)

Taking this last concept as a starting point, a 3D model was physically defined for the island, in which the optimised form can reach the expected rhythm for 4 teams/day on the prototype island located at the Universidade de Vigo and 8 teams/day on the island at Revertia, and on which, by carrying out the various reuse/recycling operations (*see B.2 action deliverable*), components and equipment from the various example processes are obtained (*see B.4 action deliverable*). By way of example, Figure 3 shows the task flow that corresponds to operations required in order to obtain complete reused equipment (example 4).

In order to house the operation flows required for the various examples, according to the proposed layout, the physical construction of the island, which was based on a design proposed by the CIMA Group, corresponds to the 3D model shown in Figure 4.

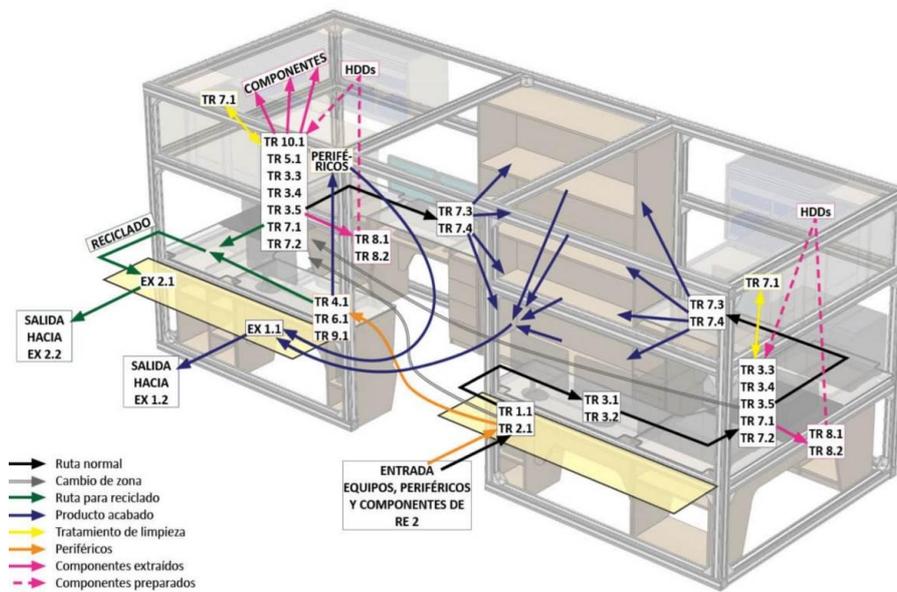


Figure 3. Example of the WEEE process work flow based on the established layout



Figure 4. Computer graphic of the final 3D model of the prototype island based on the established WEEE process layout

The final appendix to this complete deliverable contains the **Maintenance Manual** for the island, which sets out the **general maintenance** tasks for the complete installation and the **specific maintenance tasks** in each post, for all work posts and all equipment/tools used thereon (as shown in the range of operations established in the project's B.2 action).