

MODELS FOR THE MPM-10 PASSENGER COMPARTMENT AND DRIVER'S CAB

SEPTEMBER 2011

THE DESIGN OF THE MPM-10 CARS IS OF MAJOR IMPORTANCE TO THE SOCIÉTÉ DE TRANSPORT DE MONTRÉAL (STM). THESE NEW CARS WILL SIGNIFICANTLY IMPROVE THE CLIENT EXPERIENCE THROUGH, IN PARTICULAR, INCREASED COMFORT AND STATE OF THE ART INFORMATION SYSTEMS. THIS 21ST CENTURY ROLLING STOCK WILL THUS IMPROVE THE QUALITY OF SERVICE.

USE OF MODELS

The STM is using full-scale models to support the concept and development process for the MPM-10 cars and to validate, among other things:

- conformance with technical requirements
- the spatial arrangement
- accessibility to various equipment
- human-machine interfaces
- concept criteria
- choice of materials
- disassembly and replacement of components

CONCEPT PROCESS

The manufacturer of the MPM-10 train, the Bombardier-Alstom Consortium, is working with professionals who have solid expertise in cognitive ergonomics and industrial design. Since the start of the project, they have worked on the definition and evolution of the overall concept for the passenger compartment and the driver's cab. Following the STM's technical specifications, the ergonomists at Shumac have been issuing recommendations and technical notes from which the industrial designers at Labbé Designers are working to create the concepts. Throughout the first design phase, which ended this summer, various models were used to ensure that the proposed layouts meet the needs of future users.

PASSENGER COMPARTMENT

The overall concept for the interior layout, prepared by Labbé Designers in the earlier phases of the project, has been firmed up in order to begin the next stage of the project, the detailed concept. The model for the interior layout was tested by target groups including clients, people with functional limitations and STM employees. The MPM-10 project office was thus able to validate elements

such as the exact dimensions of the seating areas, standing areas, doors and windows, the profile of the seats (tested and selected by clients last spring), the "warmth" of the lighting, the integration of the communications systems and the positioning and height of the emergency brake handles, passenger interphones and support poles.



DRIVER'S CAB

The human-machine interface for the driver's cab was developed in accordance with standard *ISO 9241 Ergonomics of human-system interaction Part 210: Human-centred design for interactive systems*. The professionals began by increasing their knowledge of the job performed by métro operators by observing them in actual situations. They then proposed various configurations for the control console and the cab, including the seat, which they validated by having several operators of various builds, experience levels and origins come and test them over a period of time in various increasingly sophisticated models.

