Return to Full

The **New York Times**

September 6, 2004 Monday
Late Edition - Final

SECTION: Section D; Column 1; Automobiles; AUTOS ON MONDAY/Design; Pg. 9

LENGTH: 1027 words

HEADLINE: At M.I.T., Rethinking the Car for City Life

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BODY:

THE start of a new school year at M.I.T. means that, once again, students are about to reinvent the automobile.

On Wednesday, the first day of the fall term, students and interested observers will hear a progress report by William J. Mitchell, a professor of architecture and media at the Massachusetts Institute of Technology, and Ryan Chin, a Ph.D. candidate, on a project to create a car for the city of the future by the institute's Media Lab. The design study grew out of Mr. Chin's doctoral thesis, which compared the way cars are designed with the ways buildings are designed.

Begun two years ago with help from General Motors, a longtime sponsor of the Media Lab, the project's early stages included a bonding session in which participants learned about vehicle dynamics at the Skip Barber driving school in Monterey, Calif.

Though the project is still virtual -- a rolling prototype is at least a year away -- the vehicle is widely known on campus as "the Gehry car" for the involvement of the architect Frank Gehry. Dr. Mitchell brought Mr. Gehry, who designed the institute's Stata Center, to the program.

So far, the car is best embodied in a tapered silvery shape, part sow bug and part model for a science-fiction film. This is not the way the car will ultimately look. The project is really many cars, represented in cardboard, wood and foam models expressing the ideas of a group of students. Many of these will be on display at the institute's Wolk Gallery through October 15.

Various iterations of the car have been generated in Catia, the design software created by Dassault Systemes of France which is now a mainstay of the auto industry. It has also been used by Mr. Gehry and his technology expert, James Glymph, to design the folds and bends of metal in such buildings as the Guggenheim Museum in Bilbao, Spain, and the Walt Disney Concert Hall in Los Angeles.

For Dr. Mitchell, the keynote of the project is understanding the automobile and the city as a single system. "We see the automobile as much an information device as a transportation one," Dr. Mitchell said. "It should know what you want and what the city has, and be able to relate the two."

The project envisions networked vehicles with a bank of integral information, including parking and navigation -- cars as smart and helpful as a London taxi driver.

The goal is to dissect the structure of the car and look at it afresh. The process is like diagramming a sentence; by working through the problem so logically and indeed unemotionally the designers anticipate discovering new possibilities. G.M. hopes to learn from M.I.T., and many are intrigued to see what an acclaimed architect can bring to auto design. J Mays, vice president of design for Ford, offered to hire Mr. Gehry.

"We want to step back and rethink the automobile from scratch," said Mr. Chin. "We are parsing the language of automobile building."

The parts of speech of automobiles -- power plant, seating, steering and so on -- were literally represented in one exercise by brightly colored wood blocks that together look like an abstract work of art.

The seminar on wheels has spawned offbeat ideas. One version of the car changes length, accordion style, to accommodate extra passengers. Another wraps the seat and door into single unit, along with air bags.

The basic parameters call for a hybrid or fuel cell power plant, and drive-by-wire controls that replace mechanical links to the brakes and throttle with electronic connections. The body structure is a combination of exoskeleton and softer passenger compartment, tagged the "egg in the egg carton" around the Media Lab. The most striking elements of the car are wheels that incorporate electric motors and the suspension inside their circumference. This innovation promises to ease the task of parking on narrow Cambridge streets near the campus.

Cambridge parking challenges also seem to have inspired the idea of the "smart curb," one area where the Media Lab succeeds in sharpening the familiar vision of networked cars. In this concept, parking spaces would electronically report their availability. Feeding this information to vehicles would create what Dr. Mitchell calls a market in parking, providing a more efficient way of finding a spot.

Eventually, after the new crop of students has put another nine months or so of work into the project, the more developed designs will be turned over to Mr. Gehry and his office. "Frank will more than likely end up styling it," said Dr. Mitchell, not embarrassed to use a word Detroit avoids these days. Mr. Gehry and his associates will collaborate with G.M.'s California design office and Wayne K. Cherry, the company's former design chief.

Dr. Mitchell can laugh at being confused with another Mitchell -- the one who ruled G.M.'s design studio in the glory days of the 1960's -- but he also appreciates style as well as engineering.

"One of the things architects have been good at is making something that is functional into something that is also compelling, to capture people's imagination," Dr. Mitchell said.

Mr. Gehry has often looked at things with a fresh eye, making furniture from cardboard or strips of wood bent like hockey sticks. But shaping the M.I.T. car will be challenge.

The ability to style ideas, too, to create catchy visions of future tech has long been the Media Lab's strength. A clever name like smart curb goes a long way. In experimenting with different ways of arranging passengers inside the car, students came up with a pattern they call rock-band seating.

Such phrase-making is good styling and good media making. Envious professors from other areas of the institute have grumbled that the Media in Media Lab refers mostly to getting as much of its attention as

possible.

The comparison of design and architecture with language may be useful, but is metaphorical, not literal. And language only begins with grammar. It is one thing to speak or write correctly, another to do so with meaning and feeling. The Media Lab's car will need some rhetoric, some prosody, perhaps even some poetry to become more than an academic exercise.

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GRAPHIC: Photo: The Soft Car design proposal from M.I.T. has axles that swing 90 degrees. It can pull up alongside a parking space and drive in sideways. (Photo by Mitchell Joachim, M.I.T.)

LOAD-DATE: September 6, 2004