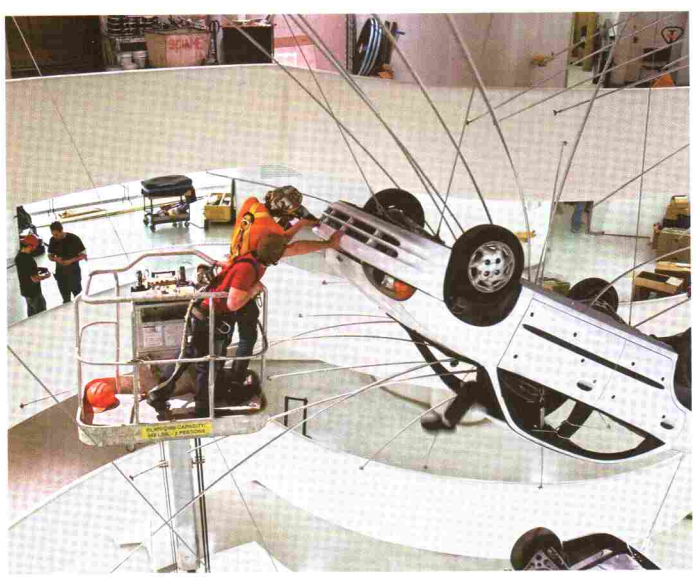
Cai Guo-Qiang with members of the installation crew of *Inopportune: Stage One* (2004).

The Fabrications Department

THE GUGGENHEIM MUSEUM'S INSTALLATION CREW

SIX OF THE NINE CARS (actual Chevy Metro sedans) that comprise Cai Guo-Qiang's show-stopping installation *Inopportune: Stage One* (2004), hang effortlessly from the ceiling of the Solomon R. Guggenheim Museum's rotunda. Brightly colored light rods spring weightlessly from the body of each vehicle, flashing collectively in a programmed sequence and giving the impression that the cars are actually a single car exploding from its initial position on the ground to its final resting place near the sixth floor. Like large white birds, the cars appear to soar upwards, alighting at the top of Frank Lloyd Wright's grand ramp. The easy grace of the overall arc, however, belies the fact that hanging these cars was far from a simple feat.

A team of creative individuals directed by Christopher George, the Guggenheim's Chief Fabricator, and supervised by the extremely knowledgeable Peter Read, Manager of Exhibitions Fabrication and Design, spent long nights and intensive days preparing, hanging, and securing each of the cars. The Guggenheim's vertical installation of *Inopportune: Stage One* is an exhibition copy of a work owned by the Seattle Art Museum—a work installed there concurrently in a horizontal fashion and composed of Ford Tauruses. After consultation with engineers, it was determined that the Seattle cars, besides being on view in Seattle, were too heavy to ever hang at the Guggenheim Museum, and equivalents had to be found. The artist required only that the cars be white, American-made, and have a trunk. Given these constraints, Mr. George and his associates researched the various alternative car models that would satisfy both structural and artistic criteria. After presenting the options to Cai, the artist selected the Chevy Metro. Because this particular model was manufactured only from 1998 to 2001 the museum purchased used cars and then painted them white. Once the cars were selected, the Fabrications Department focused on devising innovative, safe, and cost-effective methods of securing them in place.



All photos: David Heald

Each car (including the light rods) weighs about 1550 pounds, and in order ensure that they would not break under their own weight when hanging from the ceiling, an internal framework was constructed within each vehicle by temporary staff member Adam Elbroody to reinforce its body. Mr. Elbroody, who learned the art of auto-body work while working at his father's body shop, also did other modifications on the cars to make them structurally sound. When each car was ready, it was brought into the museum via a specially constructed bridge over the 88th Street access ramp, and through a removable front window. After museum hours, cables hanging from the ceiling were then affixed to each of the four corners of the car and the device was then removed (with everyone holding their breath), leaving the car hanging near the bottom of the rotunda. Those cars whose final resting position was closer to upside down were first placed into a device called an "Auto-Twirler" which rotated them into position on the ground before the cables were attached.

Meanwhile, four rope technicians, one assigned to each corner of the car, installed themselves at four separate points at the very top of the rotunda's ceiling. Five temporary staff members (Stardust Atkenson, Rob Ebeltoft, Samuelle Green [who provided support from the ground], and a Canadian team called Vertika) along with permanent staff member and Assistant Fabricator Ashley Stevenson were usually present to

faciliate the lifting. Rob Ebeltoft, who holds a level 1 SPRAT (Society of Professional Rope Access Technicians) qualification, also has a background in sculpting resins and as a theater technician. Stardust Atkenson, who loves that her profession allows her to work—literally—at great heights, is a SPRAT level 2 technician and has participated in previous Guggenheim Museum rotunda installations. Ms. Atkenson introduced Guggenheim staff to Vertika Inc., a Canadian duo of technicians (Franck Le Gleut and Frédéric Audette—both of whom hold a level 3 SPRAT qualification) who impressed Christopher George and Peter Read with their work and were invited to become part of the project team. Mr. Stevenson, as well as helping to lift the cars, also executed most of the electrical work and assisted Mr. George in the planning and technical design of the installation. Thinking about the team as a whole, Mr. George, a quiet and thoughtful man, says that he has "felt very lucky to have been able to assemble such a great crew of easygoing, yet hard-working people who each bring an area of expertise to the table."

Given the command to begin the lift by Mr. George, the rope technicians slowly cranked grip hoists to move the car up inch by inch. On average, each car took about one hour to raise. When the car reached its appropriate altitude, the cables were switched from the hoist to the museum, leaving the car suspended in midair. Asked what would happen if any of the cables were to break, Mr. George maintains that the car would be still held by a single cable without falling. The special strap (a two-point anchor sling) which allows a double connection between the hoist and the museum anchor points was designed by Mr. Stevenson with help from Mr. George and can hold up to 12,800 pounds and extensive tests were performed as well to guarantee safety. "For example, in one set of tests," said Mr. George, "each car was lifted and hung from a single attachment point on its frame. Then the other three points were tested in turn with loads exceeding what they were expected to hold in the final four-point configuration. Basically, we've done tests on the hanging points in the museum, the cable, the sling, and the car itself, and nothing will break—that's how I can fall asleep at night."

It really renews my faith in humanity to have this international group of people come together to work difficult hours on a project like this.

PETER READ

Once secured in place, Tatsumi Masatoshi, Cai's technical director, threaded each car with light rods through pre-cut holes in the car's body to create the spectacular bursting displays reminiscent of flying sparks and Cai's outdoor explosion events, spending nearly eight hours on each car. Although Mr. Tatsumi understands much English, he primarily speaks Japanese. Fortunately, temporary staff member Dante Geldhof, the primary pilot of the lift used by Mr. Tatsumi to install the rods, speaks some Japanese as well as Mandarin Chinese, allowing the installation process to proceed smoothly.

Installation of each car sometimes went on into the early hours of the morning. Watching the crew gathering to eat dinner at 2 a.m. Peter Read commented, "It really renews my faith in humanity to have this international group of people come together to work difficult hours on a project like this."

Although not every member of the Fabrications Department participated directly in the installation of Inopportune: Stage One, *each was involved in varying capacities on the construction of the exhibition. These staff members include: Chief Cabinetmaker Richard Avery, Chief Framemaker David Johnson, and Cabinetmakers Doug Hollingsworth and Peter Mallo.*