ISU ALUMNI DESIGNS EQUIPMENT FOR THE 9/11 MEMORIAL PROJECT

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From the heartland of America comes a unique design to plant the heart of the trees at the 9/11 Memorial site in New York City. Holland Moving & Rigging Supplies or HMR Supplies, owned by Chris Holland, EE 1999, was approached in 2009 about designing a custom piece of equipment to transport trees weighing up to 10 Tons. The project was then tabled until fall of 2010 when the customer again called to find a solution to planting the Swamp White Oak trees on the elevated 9/11 Memorial plaza.

Design of the Straddle Mover led by Gus Marmaras, IE 1997, began in February 2011. The opening of the 9/11 Memorial for families of the 9/11 victims is set for September 11, 2011. The timeline necessitated a short delivery time on the tree moving equipment. HMR Supplies worked hard to design and build the Straddle Mover as quickly as possible. The support of all the families of HMR Supplies’ employees made this unique piece of equipment possible.

HMR Supplies designed the Straddle Mover to meet the special needs of planting trees on the 9/11 Memorial plaza. It was important for the equipment to be able to carry the tree in the center of all the axles, be capable of traversing sideways and able to negotiate openings on the surface of the plaza. There are also up to 8 stories underneath the plaza for access, equipment and a museum requiring low ground pressure and a wider tire base.

When you see the Straddle Mover up close, on the 9/11 Memorial webcam or on YouTube, it is an impressive site. The knuckle suspension is able to lift and lower the frame and load up to 20 inches. The block and cable system is capable of lowering the load below ground level, and 135 degrees of steering allows the
Straddle Mover negotiate the tight quarters on the plaza. A single operator and a remote control operate the straddle mover.

Although the Straddle Mover was originally designed for moving trees, it can also be used for bridge deck replacement. Upgrading bridges has been high priority in the past couple years. An easier method of upgrading the bridge decking will reduce the down time for bridge repair.

HMR Supplies has been a manufacturer of the Holland Dollie for 30 years and does complete design/build solutions of custom heavy transport equipment. The ability to quickly design and manufacture in-house has led to the growth of this small Iowa business even in the poor economic conditions of the past few years. In 2008 as another Forest City company, Winnebago Industries, was laying off employees, HMR Supplies was purchasing new equipment including a 13 ft waterjet table to expand their fabrication capabilities. In 2010 HMR Supplies added 5,600 ft$^2$ to their manufacturing facility in order to accommodate an 8 ft by 25 ft oxy/fuel and plasma cutting table and allow more space for assembly of a new product, the remote controlled powered platform dolly, R/C PPD. HMR Supplies provides equipment for the oil, gas, wind, marine, heavy transport, structural moving and large product industries such as those that build large vessels and bridge structures.

Chris Holland, President, is a 1999 graduate of the Electrical Engineering college at Iowa State University. Natalie Hammer also works in the family business and is a 1995 graduate of the Aerospace Engineering college at ISU. Chris and Natalie met in the Hapkido Club at ISU. In 2009 Natalie contacted Gus, also a former Hapkido Club member, about moving to Forest City, IA. Gus accepted the position as senior design engineer in January 2010. Gus is a 1997 graduate from the Industrial Engineering College at ISU. Gus Marmaras took the lead on the 9/11 Memorial project and provided all on-site training in New Jersey at the tree farm.

www.hmrsupplies.com
www.youtube.com/HollandDollies
www.911memorial.org/911-memorial-webcam

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