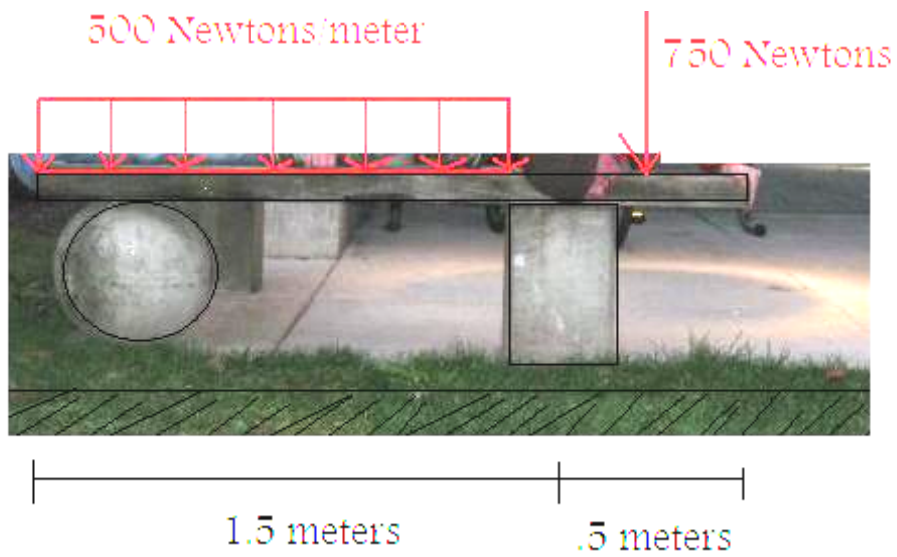
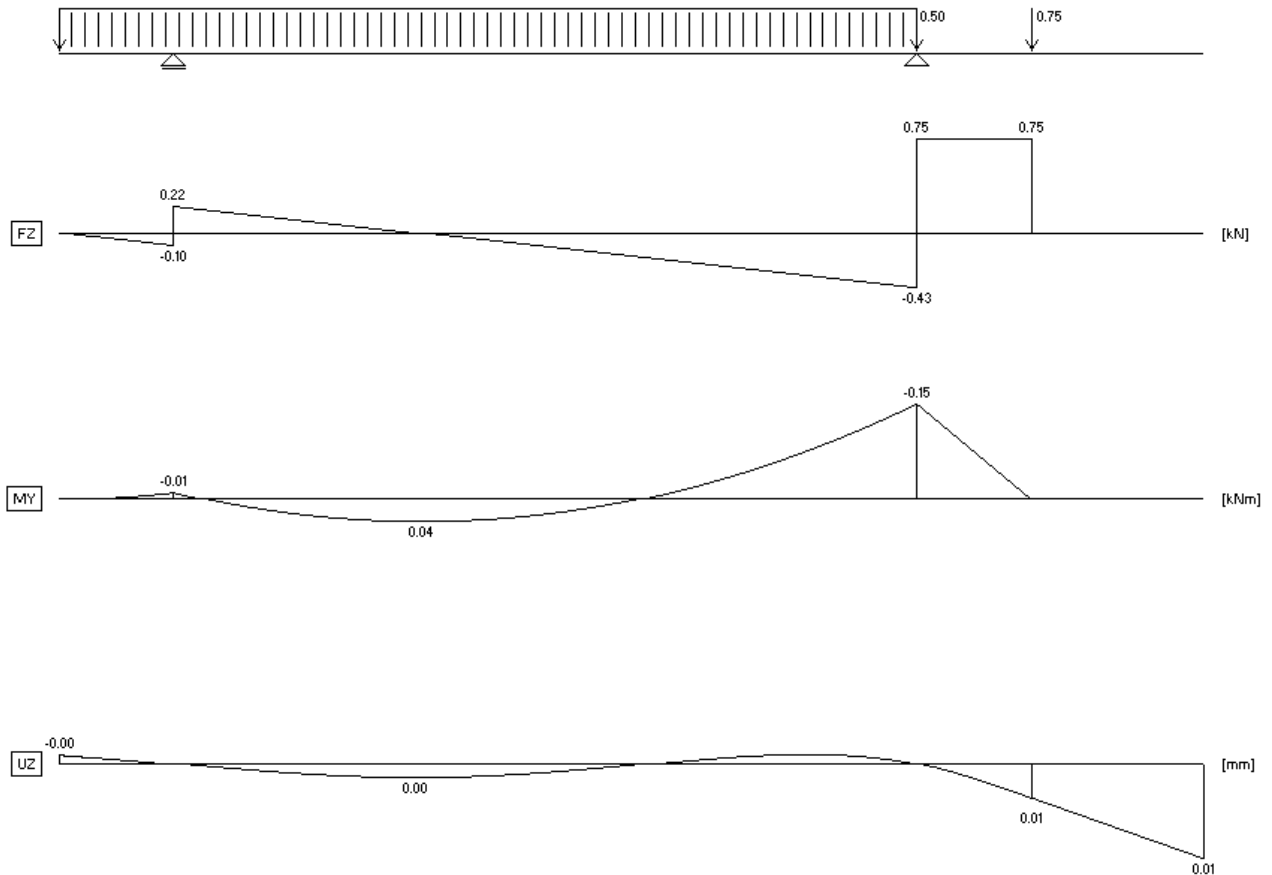


Photo Contest #1 (January 18, 2009)

Robbe Drugmand





My object is - simply put - a bench which has a distributed-load (“Rob”: approximately 0.5 Newtons per meter) and a point-load (“Joe”: roughly 0.75 Newtons) acting upon it, the weight of the top is ignored as it is minimal compared to the loads. The bench is composed of two different materials; the top is timber (with Young’s Modulus estimated at about 15,000 N/m²), the pin and roller support are concrete. The loads are transferred to the ground through these mentioned concrete supports. Because this is a bench that will most likely not see more weight than maybe 6 people (about 4 kN), little deflection can be expected. As labelled in the bending diagram, “UZ”, the most deflection caused by the applied loads, Rob and Joe, is calculated as 0.01 mm. Due to Rob and Joe, the max moment felt is 0.15 kNm and the maximum reaction force (at the pin support) is 1.18 kN. The pin support basically carries most of the load (as can be seen in the above Shear Diagram, “FZ”). As such, this is a great bench worthy of a medal for Engineering Excellence as it encompasses a variety in materials and is also aesthetically pleasing to the beholder.