The Rain Bird Engineering Concept of the Year Award is presented to an engineer or engineering team for a unique contribution to developing or advancing a new engineering concept. Through this award, ASABE highlights ideas that result in new hardware, standards of practice, design trends, educational methods or in some other way significantly affect agricultural engineering or industries it serves.

To be eligible for this award, an engineer or engineering team must first have published the new concept in an ASABE publication during the previous year. The award was endowed by Rain Bird International. Each recipient receives an engraved plaque.

Previous Concept of the Year Award Winners

1974... Herbert N. Stapleton
1975........ John G. Alphin
1976.......... Robert B. Fristley
1977........ Donald L. Peterson
1978........ Dale E. Marshall
1979........ Lambeth H. Wilkes
1980........ Hubert Geisthoff
1981........ E. Paul Jacobson
1982........ Anawalt E. Hassan
1983........ Carl Van Ghist
1984........ Richard L. Ledebohr
1985........ Michael B. Timmons
1986........ No recipient
1987........ Charles E. Grawey
1988........ No recipient
1989........ Gary R. Van Ee
1990........ Harold T. Wiedemann
1991........ Bruce A. Smallcombe
1992........ No recipient
1993.......... Hans D. Christian
1994.......... Bill Cameron
1995.......... Robert J. Monson
1996.......... Joseph C. Hurlburt
1997.......... Alfred J. Hawkins
1998.......... Lawrence G. Zierhut
1999.......... Paul A. Leavitt
2000.......... Ken Giles
2001.......... Barney K. Huang
2002.......... No recipient
2003.......... Dick Hook
2004.......... Jim Noonan
2005.......... No recipient
2006.......... Garrett Goins
2007.......... David Steindale
2008.......... Gary Gallens
2009.......... No recipient
2010.......... Steve Gaed
2011.......... Tracy Archer
2012.......... Jimmy Harpelt
2013.......... Jon Brown
2014.......... No recipient
2015.......... Kevin Richman
2016.......... Robert Witz
2017..........内森·斯坦利
2018.......... No recipient
2019.......... No recipient
2020.......... No recipient

Currently, apples are harvested manually around the world, requiring a large, semi-skilled workforce during the short harvest window. Shake-and-catch technology has been successful in harvesting fruit for the processing market, but no commercial success has been achieved in harvesting fresh market fruit such as apples, pears, peaches, and cherries because of limited machine efficiency and high level of fruit damage. At Washington State University, a novel technology has been developed that consists of a precise, targeted shaking end-effector and mirrored copies of a multi-layer catching mechanism (collectively called targeted shake-and-catch) appropriate for harvesting apples in modern fruiting wall apple orchards. This technique was expected to substantially improve the fruit removal efficiency of the system by shaking the individual target branches instead of impacting the entire tree trunk or shaking the entire tree canopies. In addition, it was expected to decrease the likelihood of fruit damage by catching the removed fruits right underneath where they are (with minimal drop distance), thus maintaining the desired, marketable fruit quality.

Based on this concept, a semi-automated, hydraulically actuated harvesting system was developed. This system consists of three main components; a self-propelled orchard platform; a vibratory shaker powered by a hydraulic motor; and a mirrored, three-layer fruit catching mechanism with padded catching surfaces.