Emergent Designer is an integrated research and design support tool that uses various models of complex adaptive systems, including cellular automata, evolutionary and coevolutionary algorithms, to represent and support systems and design processes. It is intended for conducting design experiments in the area of structural design and for the analysis of their results using tools, models, and techniques from statistics, dynamical systems, and time-series analysis.

Emergent Designer consists of 10 major components which can be divided into three groups:

- **Design components** implementing Emergent Engineering Design, the design method based on models of complex adaptive systems
- **Analysis components** implementing tools and methods for the analysis of the experimental results and design processes.
- **Visualization components** - additional components implementing visualization techniques and report generation tools.

It establishes a new generation of design support tools equipped with the state-of-the-art design mechanisms for the generation of creative/novel design concepts and for conducting their optimization.

It is a portable and network-oriented system written in Java and built upon several existing packages. It integrates several commercially available systems (Mathematica, OpenOffice.org, JMS, SODA, WindLoad) and communicates with them using available Java APIs.

Credits:

Evolutionary computation toolkits developed by Dr. Kenneth De Jong, ECKit toolkit created by Dr. Mitch Potter, representations of steel structural systems in tall buildings created together with Dr. Tomasz Arciszewski, Java implementation of MersenneTwister due to Dr. Sean Luke, visualization and cellular automata computations conducted using Mathematica, statistical calculations and time series analysis conducted using JMSL Numerical Library, reports generated using OpenOffice.org, wind forces computed by WindLoad, structural analysis conducted using SODA, graphs are generated using PPlot 3.3, the system was developed using the Eclipse Platform.