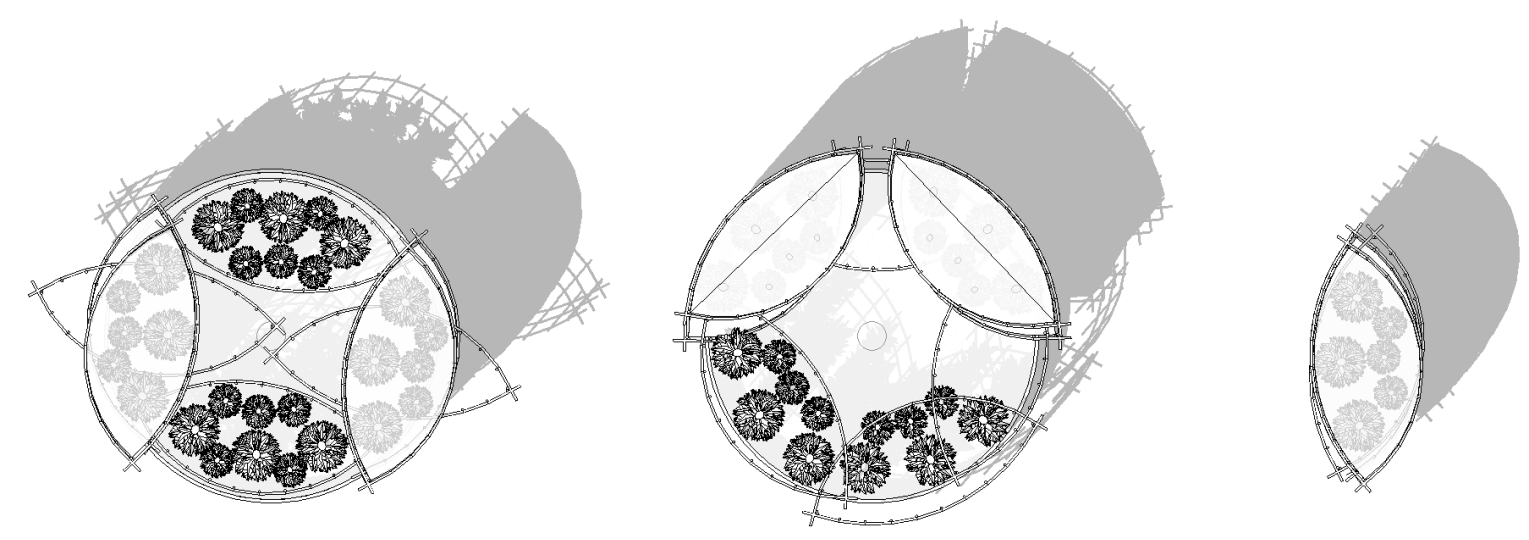


SIATAI unit

The basic unit of the system is a cylinder-shape-based (12-m diameter) modular steel construction, made of asymmetric-biconvex-lens-shaped space frames, ca. 8×4×3 m each. There are both closed (year-round, film-covered greenhouses) and open (meadows) vertical vegetation production sectors within the unit. The frame elements build-up the unit **form**, and have three major **functions**: (i) serve as a mechanical support for the vertical tubes on which plants grow; (ii) are the “exoskeleton” of the film-covered greenhouse parts; (iii) react with the wind, being aerodynamically shaped (because of the differing wind paths lengths on both sides of each element, an asymmetric air pressure will emerge). The elements also dynamically react with each other, being continuously dragged out of the equilibrium state by the wind, but are held in place by the piezoelectric joints.



SIATAI scenario 2

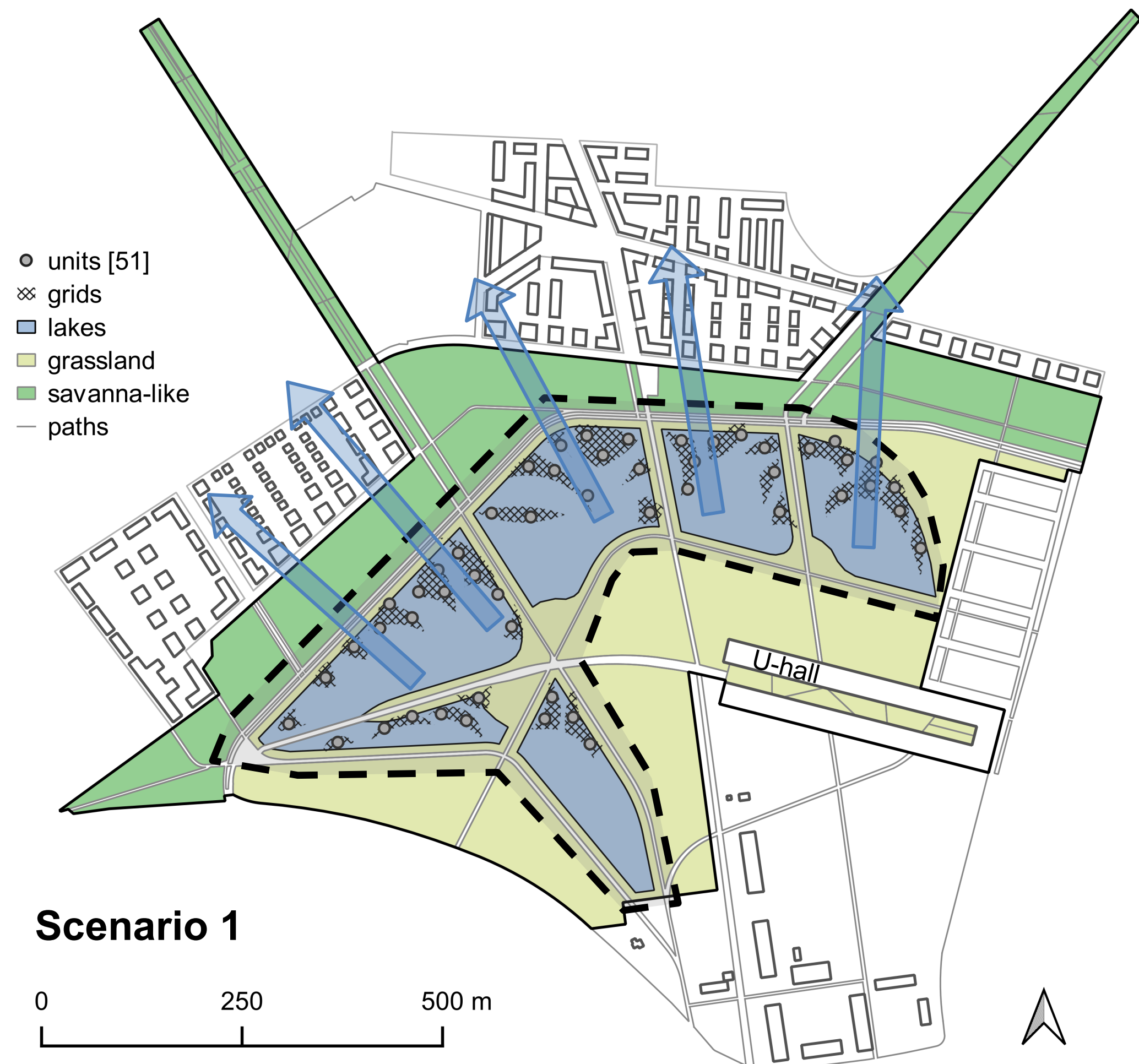
Scenarios 1-3

The unit may either function as a part of a large setting: when there are many individual units, and there is a shift in biomass production cycles, to regularly supply the predigested matter to a hub-unit (scenario 1); or as a stand-alone system: complete energy production process is within few units (scenario 2) or a “half-unit” (scenario 3), placed within a small area, such as a “kleingarten” or “Schrebergarten” (small garden). Scenario 2 and particularly scenario 3 would depend on regular bio-waste supplies from outside, to maintain a continuous biogas production process.

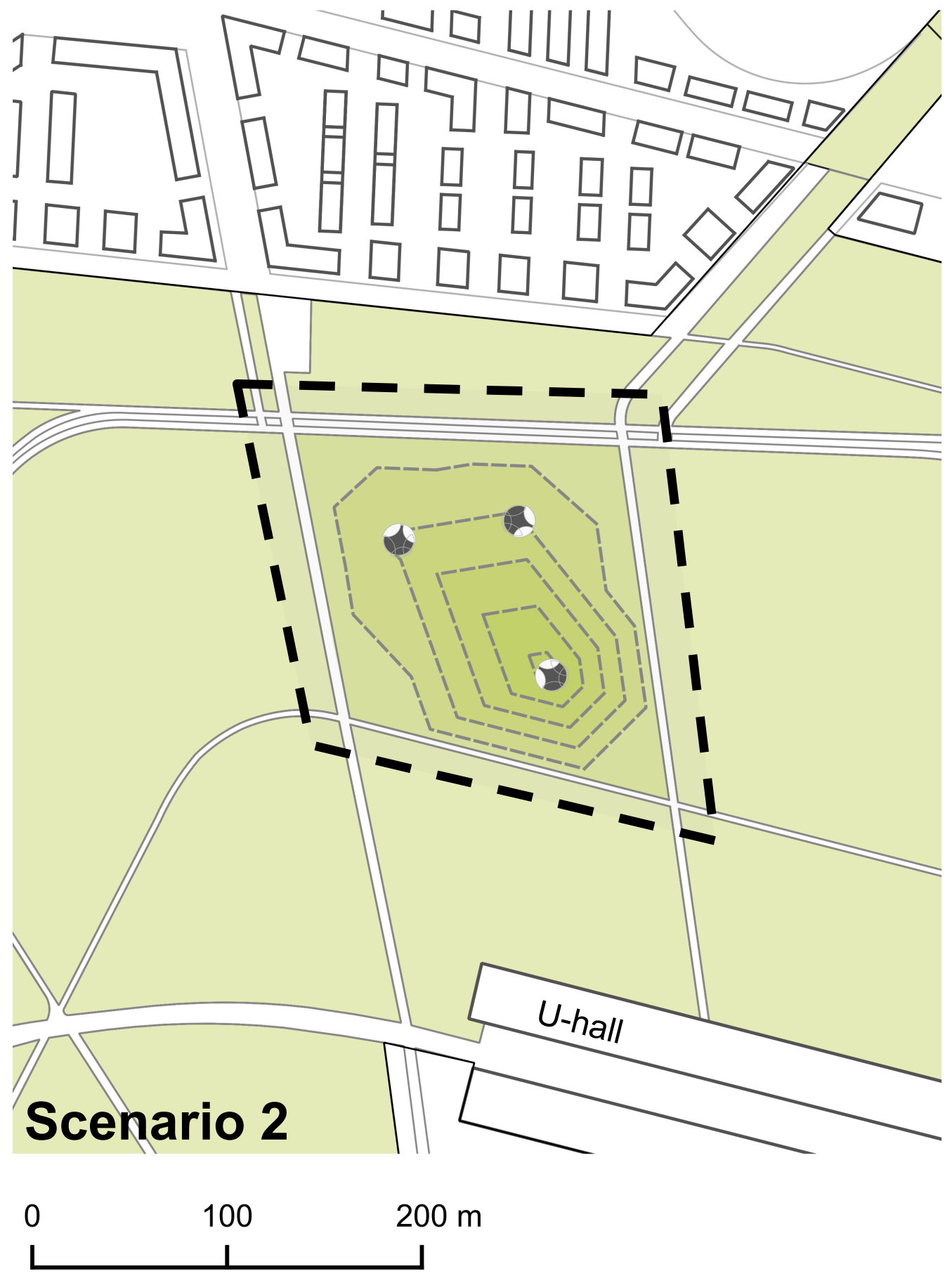
Scenario 1: **363 MWh/yr**
area required: ~18 ha

Scenario 2: **20.3 MWh/yr**
area required: ~2.8 ha

Scenario 3: **3.2 MWh/yr**
area required: ~300 m² (0.03 ha)



Scenario 1



Scenario 2