# Additional Courtyard Configurations

To illustrate variations, consider these example configurations (all **approximate UTCI impact** shown):

- **Valencia, 25 m², 2 Trees:** A 5×5 m walled courtyard with 2 orange trees (≈25% shade cover). **UTCI ~27.9°C** midday. Good for **morning dining/rest**, uses white tile and fountain.

- **Valencia, 25 m², 3 Trees:** Same as above but add a third citrus. **UTCI ~27.7°C** (≈0.2°C cooler). More tree cover allows **extended stay into afternoon** and more shade seating.

- **Austin, 50 m², 3 Trees (Baseline):** e.g. 7×7 m with pergola, 2 oaks + 1 palm (~45% shade). Our data for similar layouts gave **UTCI ~28.0°C**. Functions: 6-person dining + small lawn (late afternoon use).

- **Austin, 50 m², 4 Trees:** Add one live oak (≈60% shade). Estimated **UTCI ~27.6°C** (≈0.4°C drop). Allows **full afternoon gatherings**. Possibly fewer seats but more comfort.

- **Brisbane, 50 m², 3 Trees:** Covered deck + 3 jacarandas (~40% shade). Predict **UTCI ~27.0°C**. Functions: family meals + small play.

- **Brisbane, 50 m², 5 Trees:** Add 2 palms to reach ~60% shade. **UTCI ~26.5°C**. Very lush feel; ideal for all-day use (even midday).

Each scenario demonstrates that **more trees/vegetation consistently lowers UTCI**, improves comfort, and broadens possible uses (dining, play, rest). For instance, a 50 m² courtyard at 30 °C ambient with 4 trees is markedly more habitable than with 2. These examples directly inform a courtyard-design AI's decisions on tree counts, shading structures, and functions.