

Supplementary Information for
“Honeycomb construction on designed
foundations reveals geometry-dependent
developmental pathways”

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Fig. S1 Full-field view of the Square foundation at day 3 after installation, shown with bees present. The foundation panel size is 200 mm $\times$ 200 mm. This image corresponds to the same observation time as Fig. 5a in the main text, where a bee-cleared partial view was used to visualize local cell geometry. The present full-field image shows the overall spatial distribution of construction, indicating that wax attachment was concentrated in the upper central region, while large areas of the foundation surface remained unoccupied at this stage.

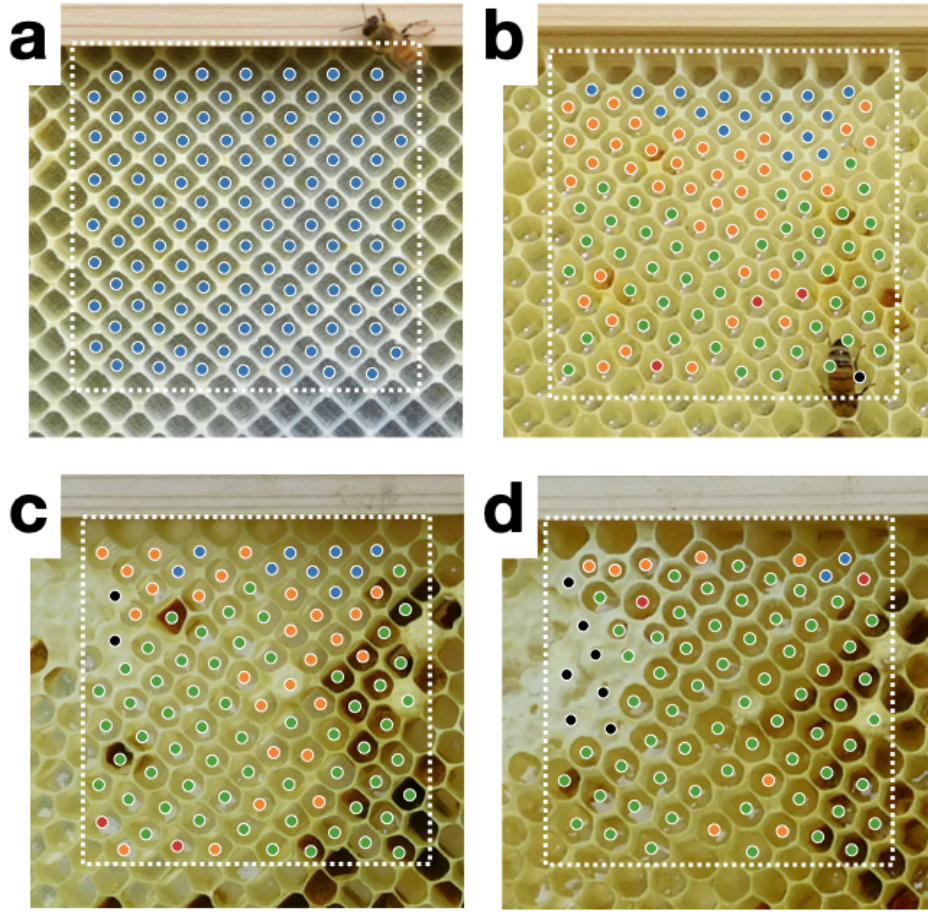


Fig. S2 Examples of polygon classification used for quantitative analysis in the Square condition. (a–d) Representative regions at different observation times corresponding to those shown in Fig. 6a–d in the main text. Colored markers indicate the identified polygon types: four-sided cells (blue), five-sided cells (orange), six-sided cells (green), and other polygon types (red). Cells that could not be reliably classified due to occlusion or incomplete visibility are indicated in black and were excluded from proportional summaries. The dashed white rectangle indicates the region of interest (ROI), which was used consistently for classification across time points whenever visibility allowed. These annotations illustrate the criteria used for manual classification and support the reproducibility of the polygonal composition analysis.