SHADE AND SHADOW STUDY

PREPARED BY:

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PROJECT ADDRESS:

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Simi Valley, CA 93063

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ARCHITECT:

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SUMMARY OF SHADING DIAGRAMS:

The attached shading diagrams show the shading effects of the proposed project (shown in green) on the ground and roofs (shown in brown) of adjacent and nearby properties. Included are diagrams at the Winter Solstice (December 21, when the sun is at the lowest point in the sky) between 9 a.m. and 3 p.m., and those for the Vernal/Autumnal Equinoxes (March 21 and September 21, respectively, when day and night are of approximately equal length) and the Summer Solstice (June 21, when the sun is at its highest point in the sky) between 8 a.m. (9 a.m. PDT) and 4 pm (5 p.m. PDT). Simulations were prepared for each hour between 9 a.m. and 3 p.m. at the Winter Solstice, and from 8 a.m. to 4 p.m. for the Vernal and Autumnal Equinoxes and the Summer Solstice. These simulations are shown attached to this report. Buildings around the project site benefit from direct sunlight. However, no photovoltaic (PV) cells were observed on these buildings during visits to the site or on satellite/aerial photos. One must note that the shadows from the proposed project never reach the roofs of adjacent properties. There are no sensitive receptors affected by the proposed building such as parks, playgrounds, pools, outdoor restaurants, etc.

1. Setting

The following discussion describes shadow conditions within and around the project. As the new project subsumes the existing structures and the new shadows minimally impact the surrounding areas. Discussion will be limited to the effects of the new building.

Winter Solstice:
The shadow sweeps rapidly from 9 a.m. to 3 p.m. and it is not on any sensitive use areas for three or more hours.

Autumnal Equinox/Vernal Equinox:
The shadow sweeps rapidly from 8 a.m. (9 a.m. PDT) to 4 p.m. (5 p.m. PDT) and it is not on any sensitive use areas for four or more hours.

Summer Solstice:
The shadow sweeps rapidly from 8 a.m. (9 a.m. PDT) to 4 p.m. (5 p.m. PDT) and it is not on any sensitive use areas for four or more hours.

2. Impacts and Mitigation Measures

This subsection analyzes impacts related to land use that could result from implementation of the proposed project. An assessment of potential shade and shadow impacts is provided, and mitigation measures are recommended, as appropriate.

a. **Criteria of Significance.** The proposed project would have a significant shade and shadow impact if it would:

- Cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space.

- Introduce landscape that would now or in the future cast shadow on existing solar collectors in conflict with California Public Resource Code Section 25980-25986.
- Cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors.

These criteria are derived from the State Public Resources Code, CEQA Guidelines, and best practice standards. Similar criteria are used in adjacent municipalities to evaluate the effects of development projects on shade and shadow.

b. **Less-than-Significant Shade and Shadow Impacts.** The following discussion describes the less-than-significant shade and shadow impacts that could result from development of the proposed project.

1) New Shadows Generated by the Proposed Project. Development of the proposed project would include the addition of a multi-unit building and the retention of an existing retail building. The new building is 2-stories higher than the adjacent multi-family buildings.

   In the early and late afternoon hours on June 21, Summer Solstice, new shadows would be cast on the Tapo Street sidewalk and a project driveway to the east.

   Shadows created by the proposed project on December 21, the Winter Solstice, would be the most extensive that could occur as a result of the development. Because the existing shadow condition within and around the project site will be subsumed by the new project, existing site shadows are not relevant. New morning (9 a.m.) shadows would extend northwestward onto Tapo Street but would not extend to the properties across it. By noon, new shadows would move to the north and barely reach the property to the north. By late afternoon (3:00 p.m.), shadows would move northeastward and just barely to the property to the east.

2) Parks and Open Space. New shadows created by the proposed project would not substantially impair the beneficial use of any public park or open space area as there are none in the area.

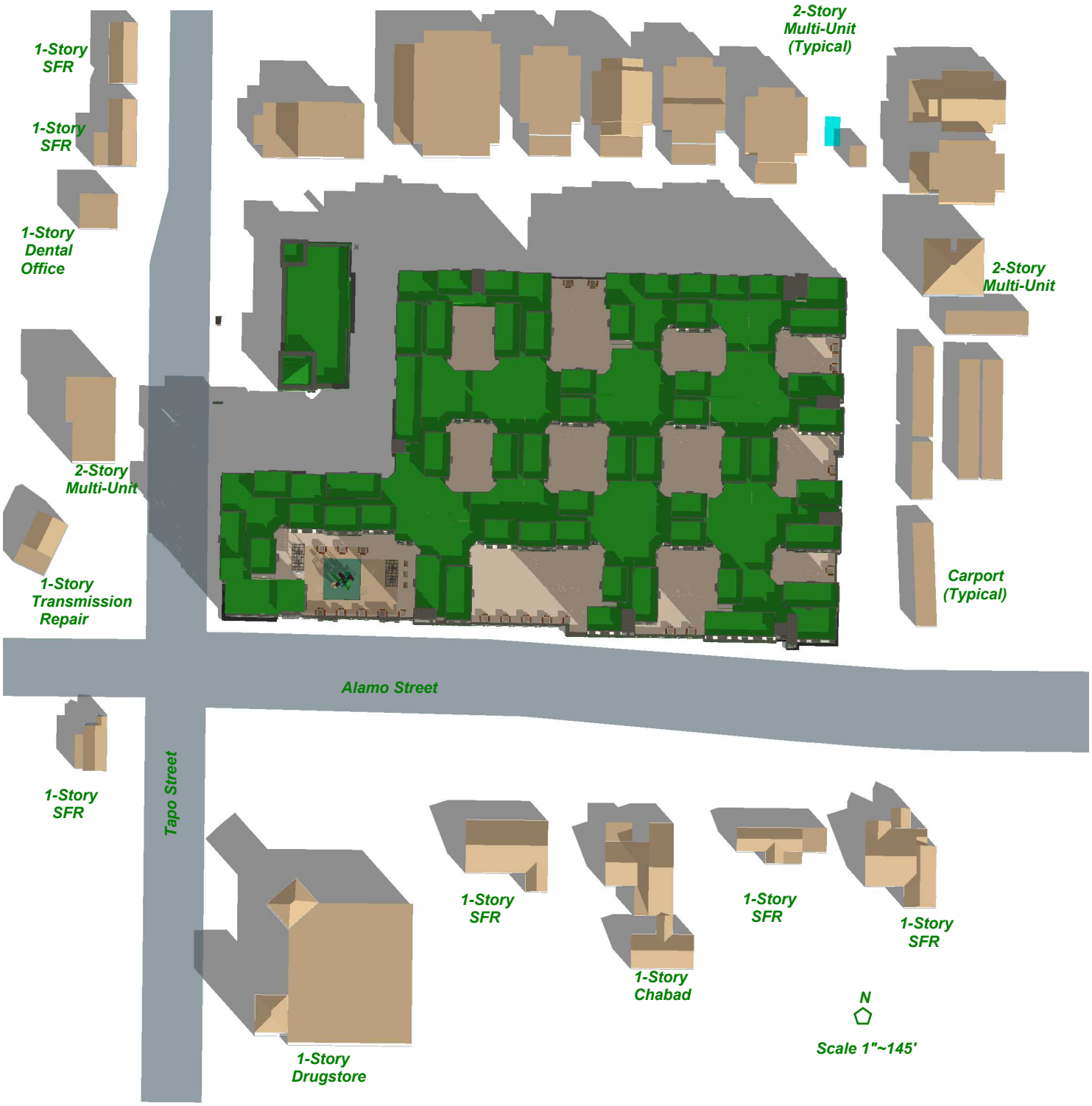
3) Solar Collectors and Photovoltaic Cells. No solar collectors or photovoltaic (PV) cells that would be substantially affected by shadows resulting from the project or landscaping proposed as part of the project were identified from a drive-through

survey of the project site vicinity and an inspection of aerial photos. As a result, the proposed project would not affect solar collectors or PV cells.

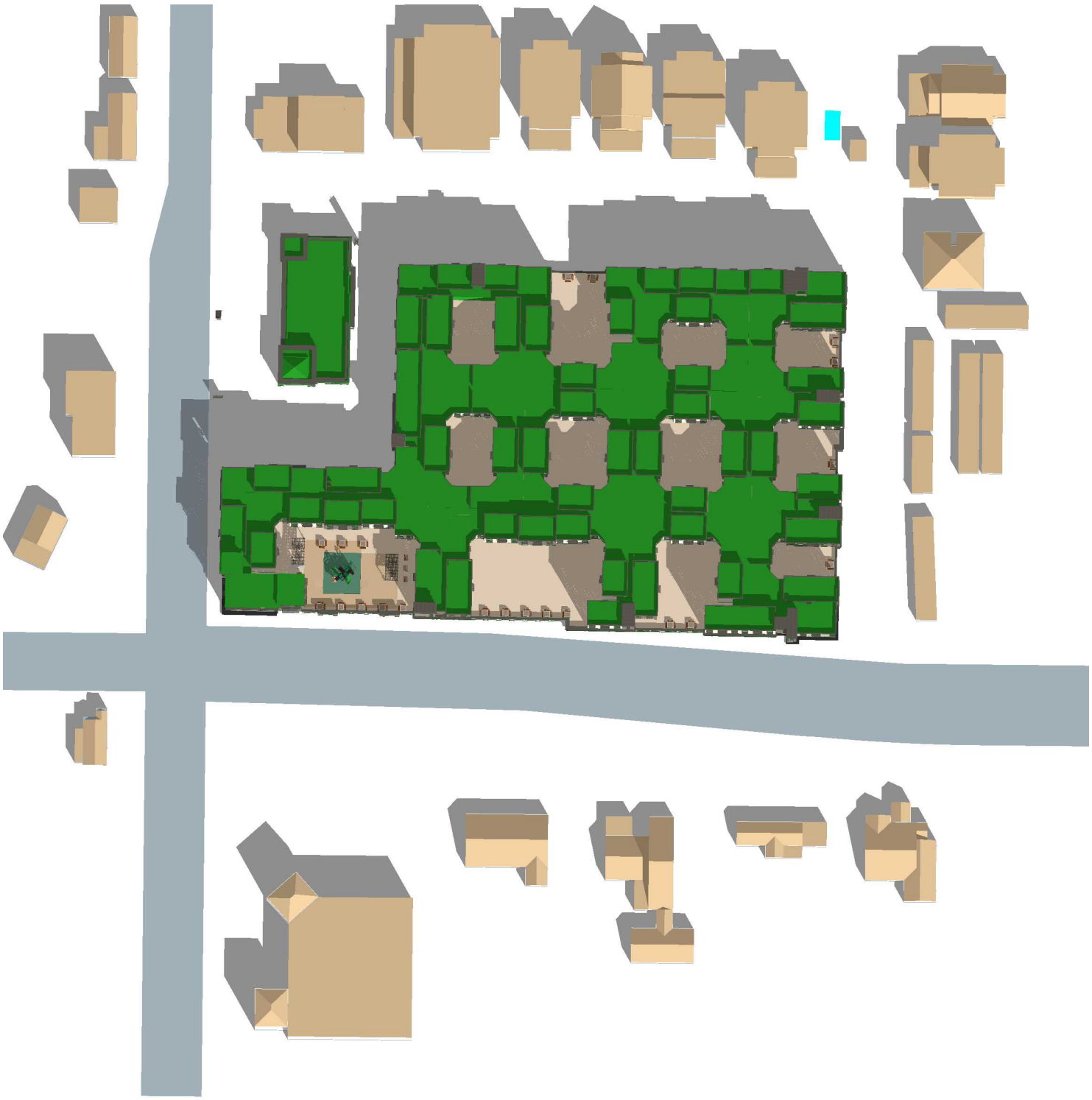
c. **Significant Shade and Shadow Impacts.** Development of the proposed project would not result in any significant shade or shadow-related impacts.

3. <u>Summary and Discussion:</u>

The project complies with the CEQA guidelines regarding shading of sensitive use areas (of which there are none).

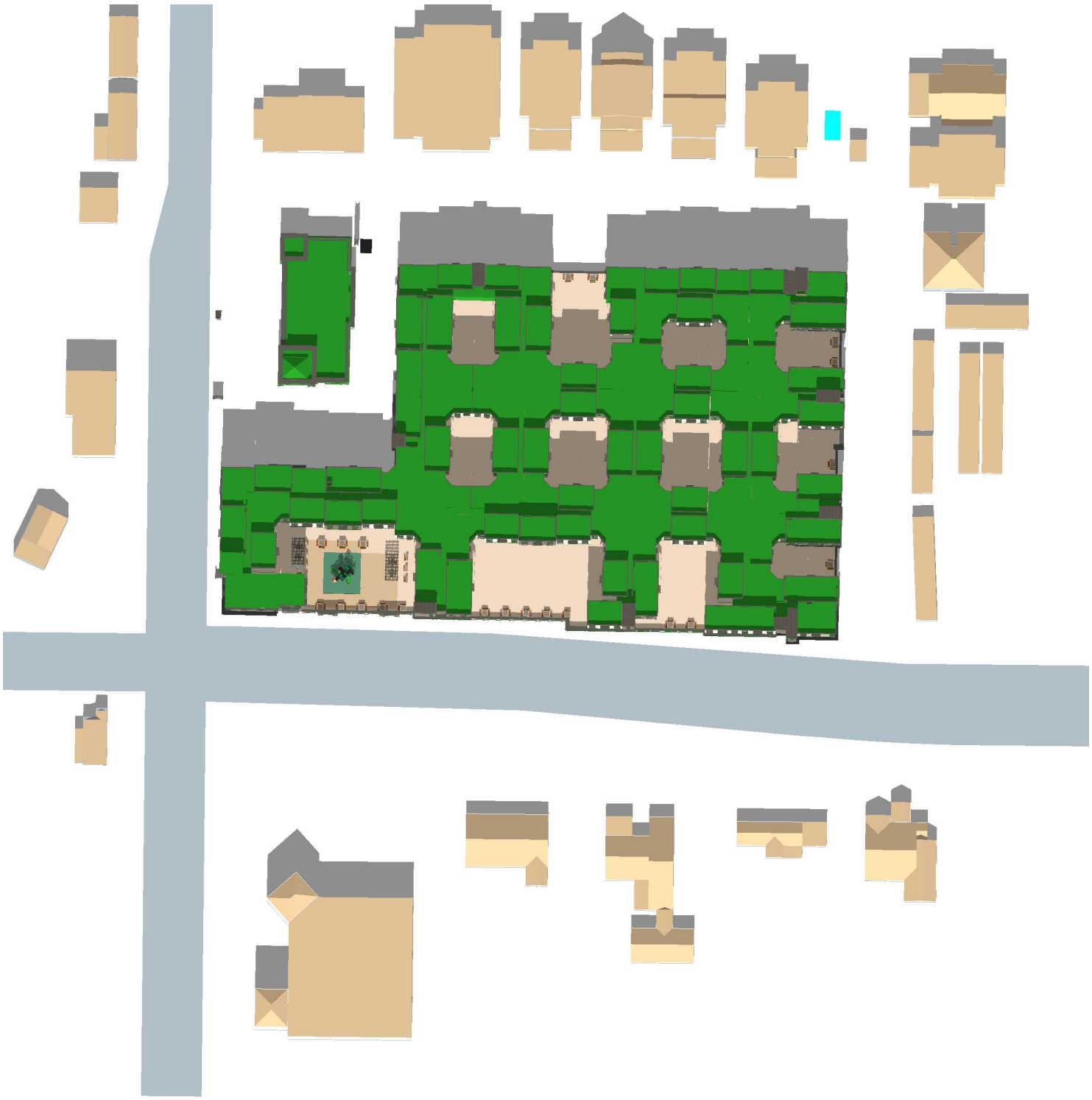


Winter Solstice Shading Diagram
9 a.m.



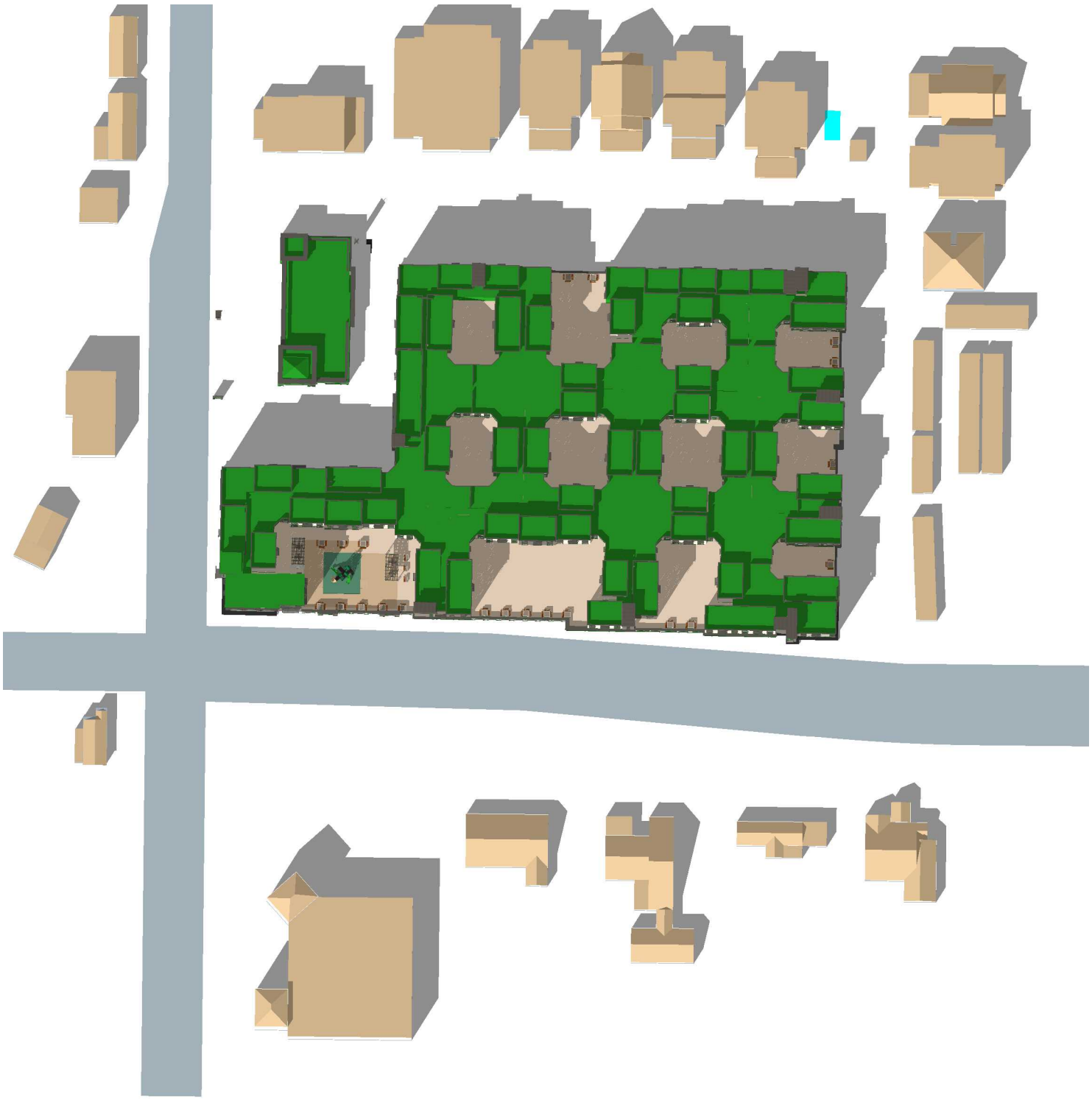
Winter Solstice Shading Diagram
10 a.m.

Winter Solstice Shading Diagram
11 a.m.

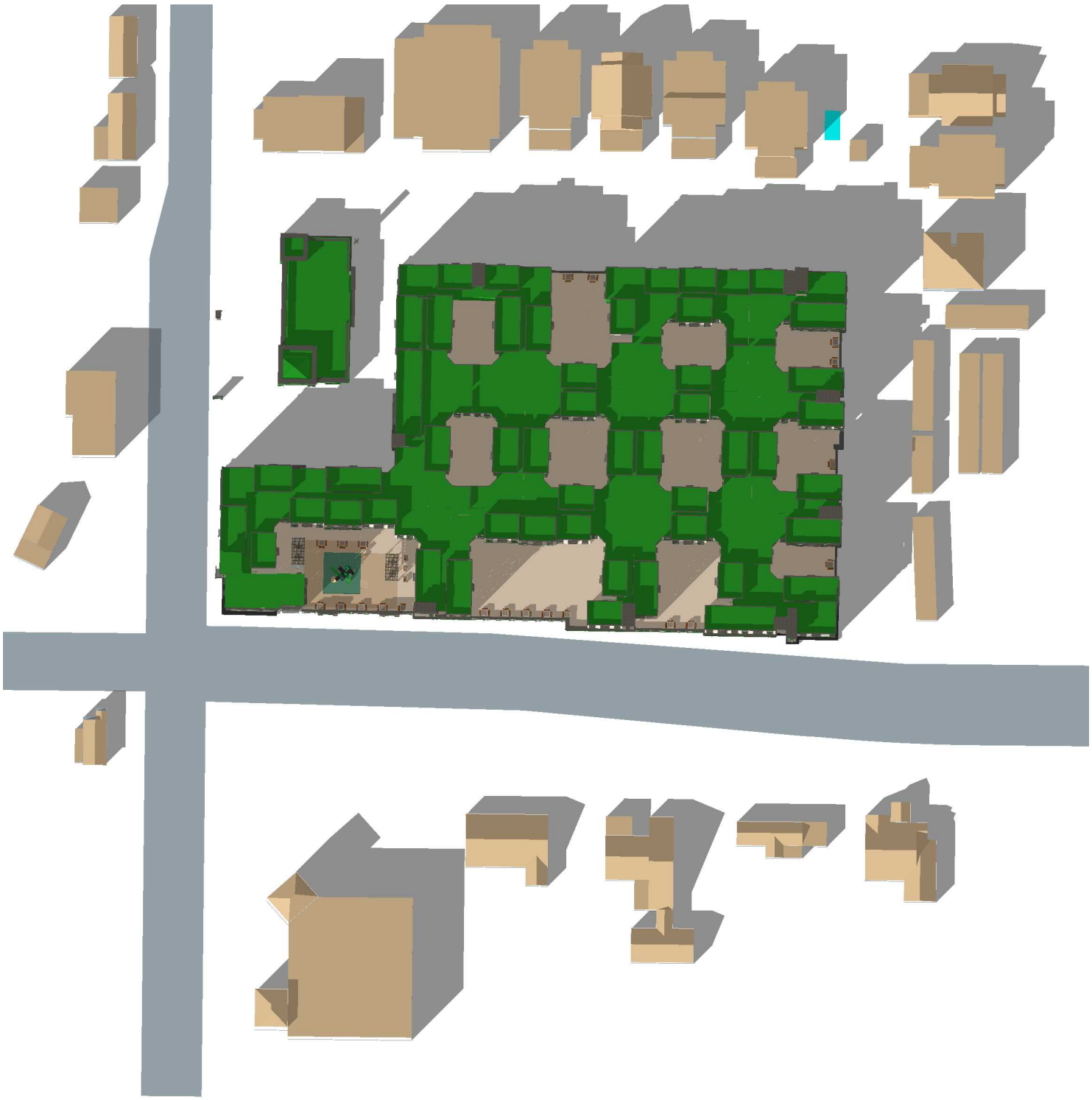


Winter Solstice Shading Diagram
Noon

Winter Solstice Shading Diagram
1 p.m.



Winter Solstice Shading Diagram
2 p.m.



Winter Solstice Shading Diagram
3 p.m.

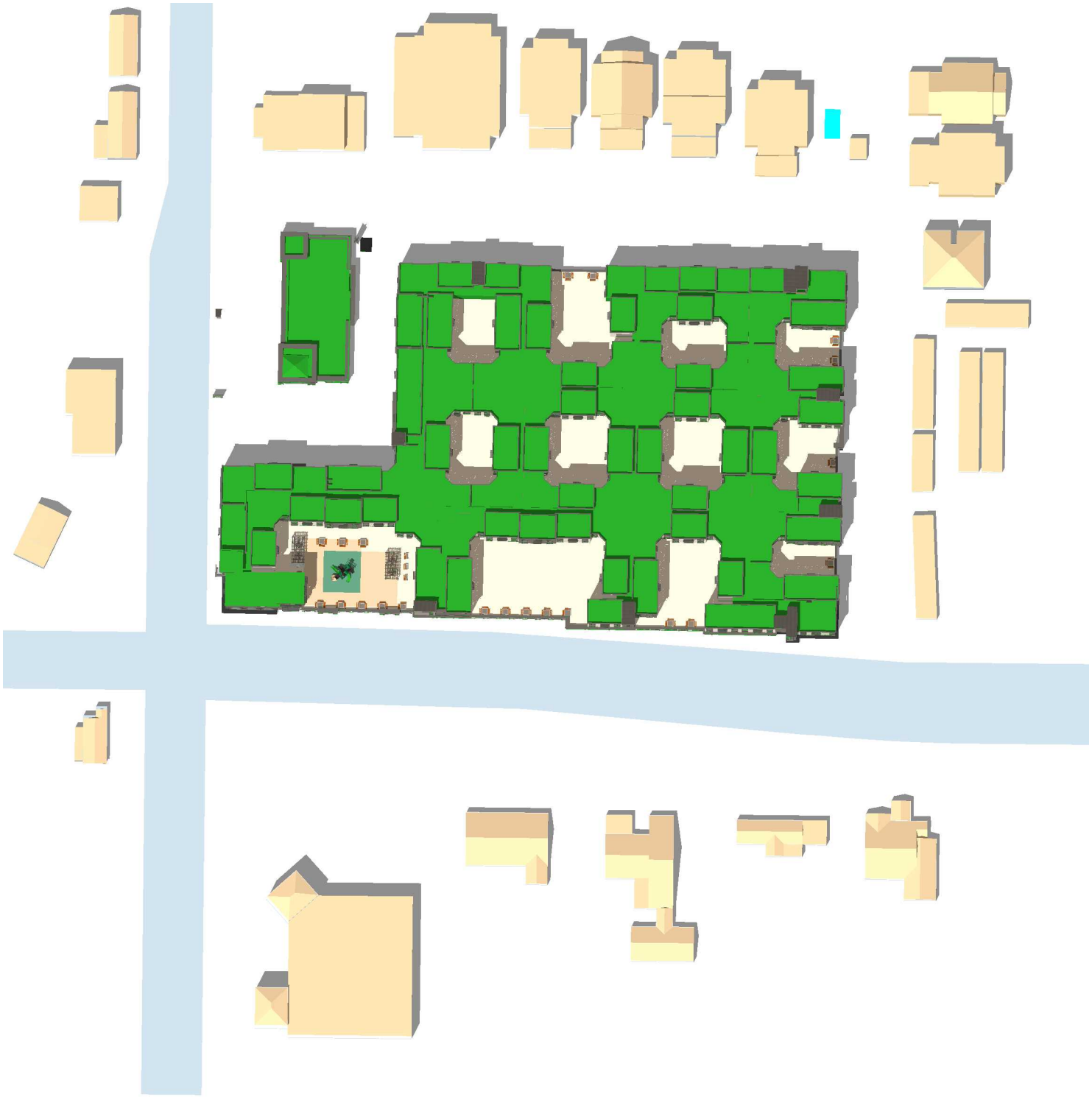
Vernal/Autumnal Equinox Shading Diagram
8 a.m.

Vernal/Autumnal EquinoxShading Diagram
9 a.m.

Vernal/Autumnal Equinox Shading Diagram
10 a.m.

Vernal/Autumnal Equinox Shading Diagram
11 a.m.

Vernal/Autumnal Equinox Shading Diagram
Noon

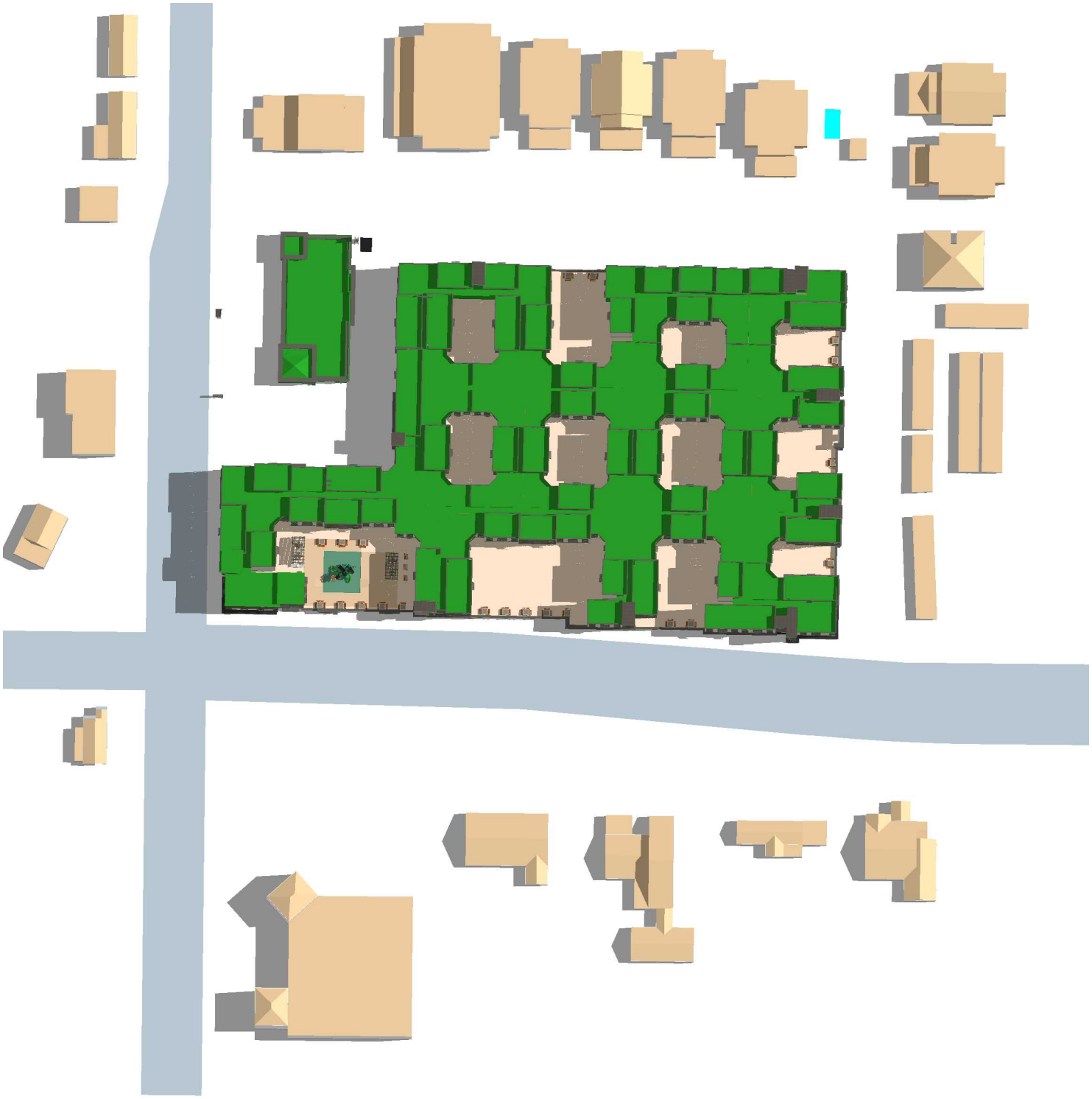


Vernal/Autumnal Equinox Shading Diagram
1 p.m.

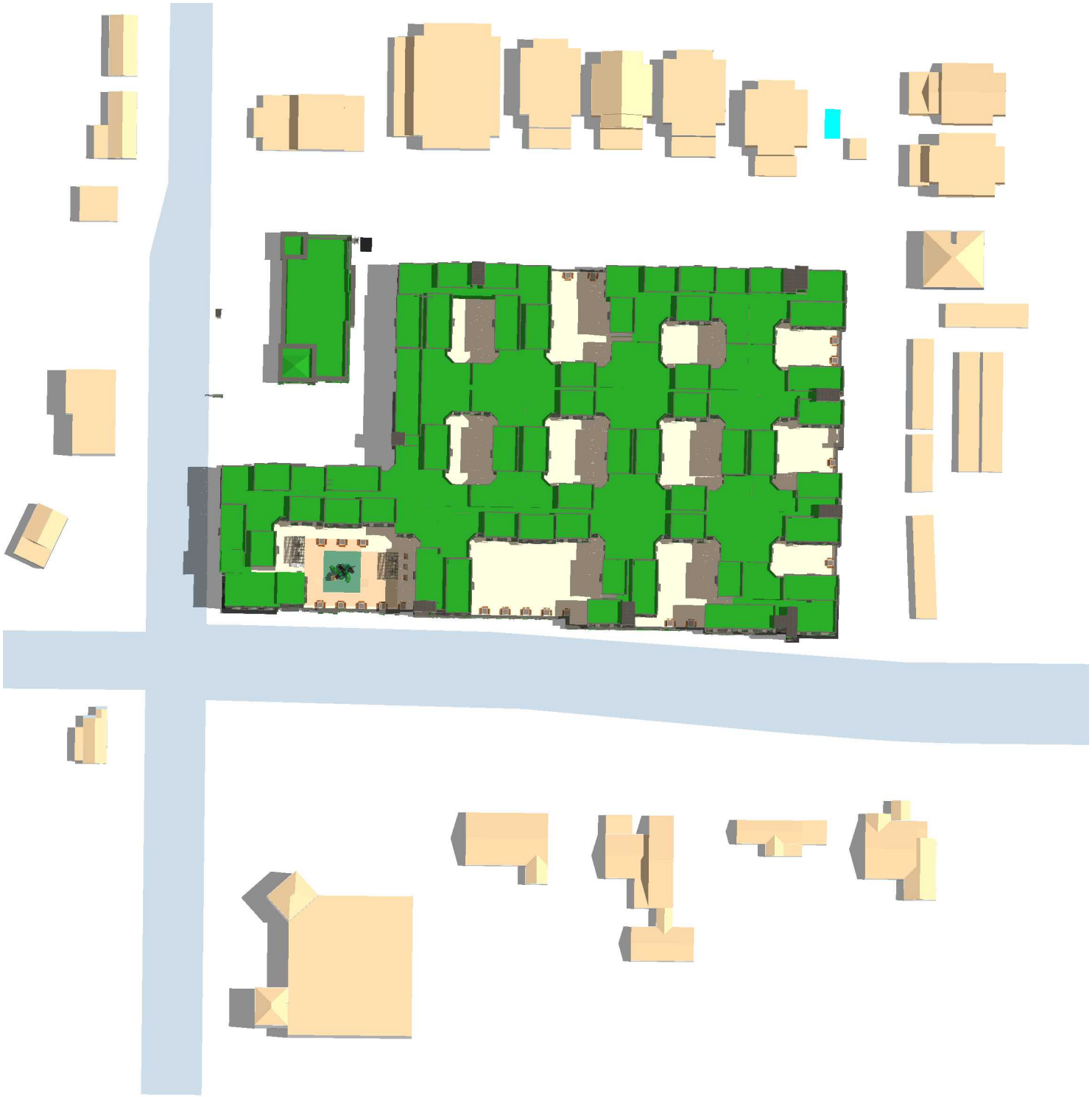
Vernal/Autumnal Equinox Shading Diagram
2 p.m.

Vernal/Autumnal Equinox Shading Diagram
3 p.m.

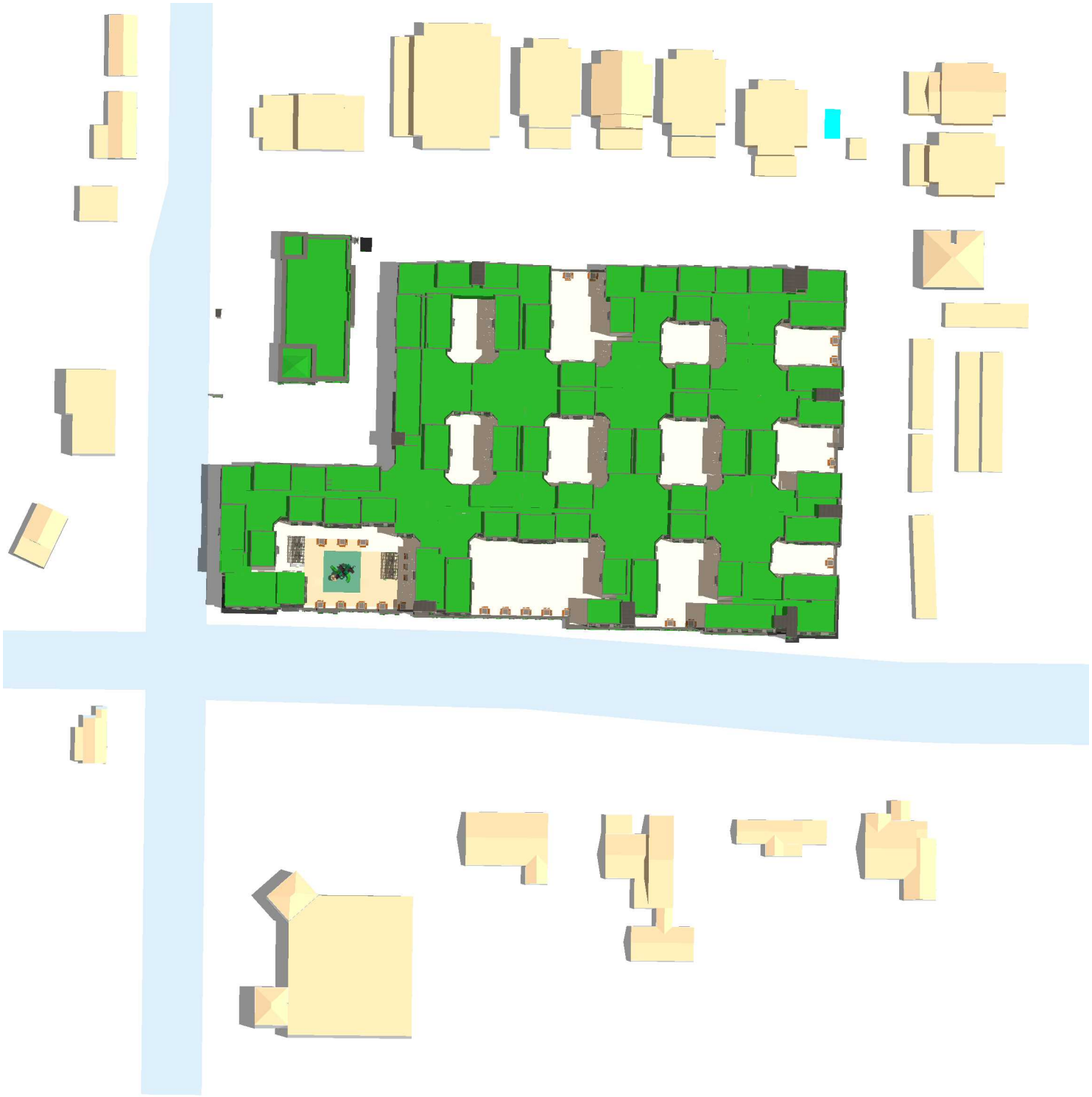
Vernal/Autumnal Equinox Shading Diagram
4 p.m.



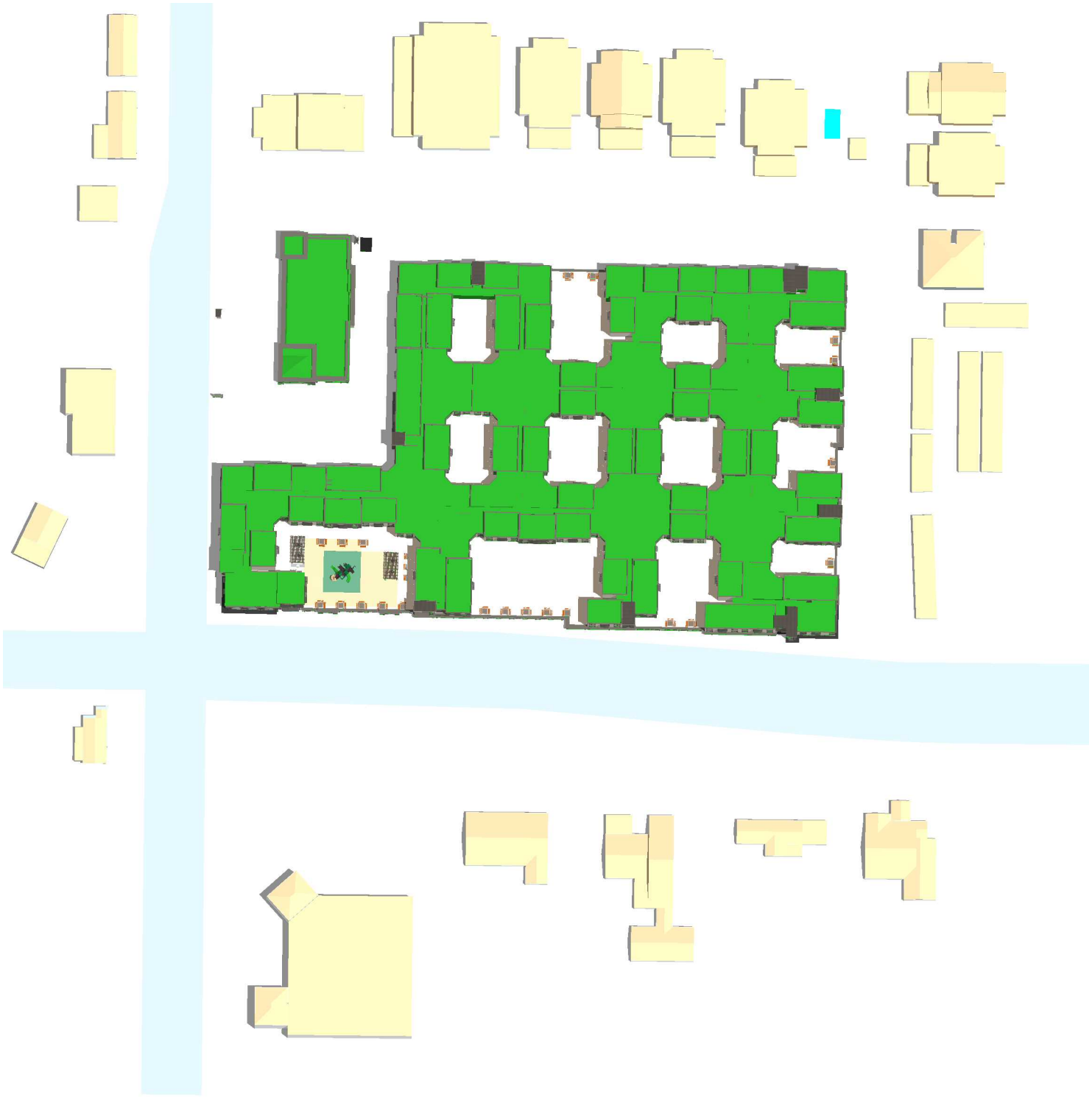
Summer Solstice Shading Diagram
8 a.m.



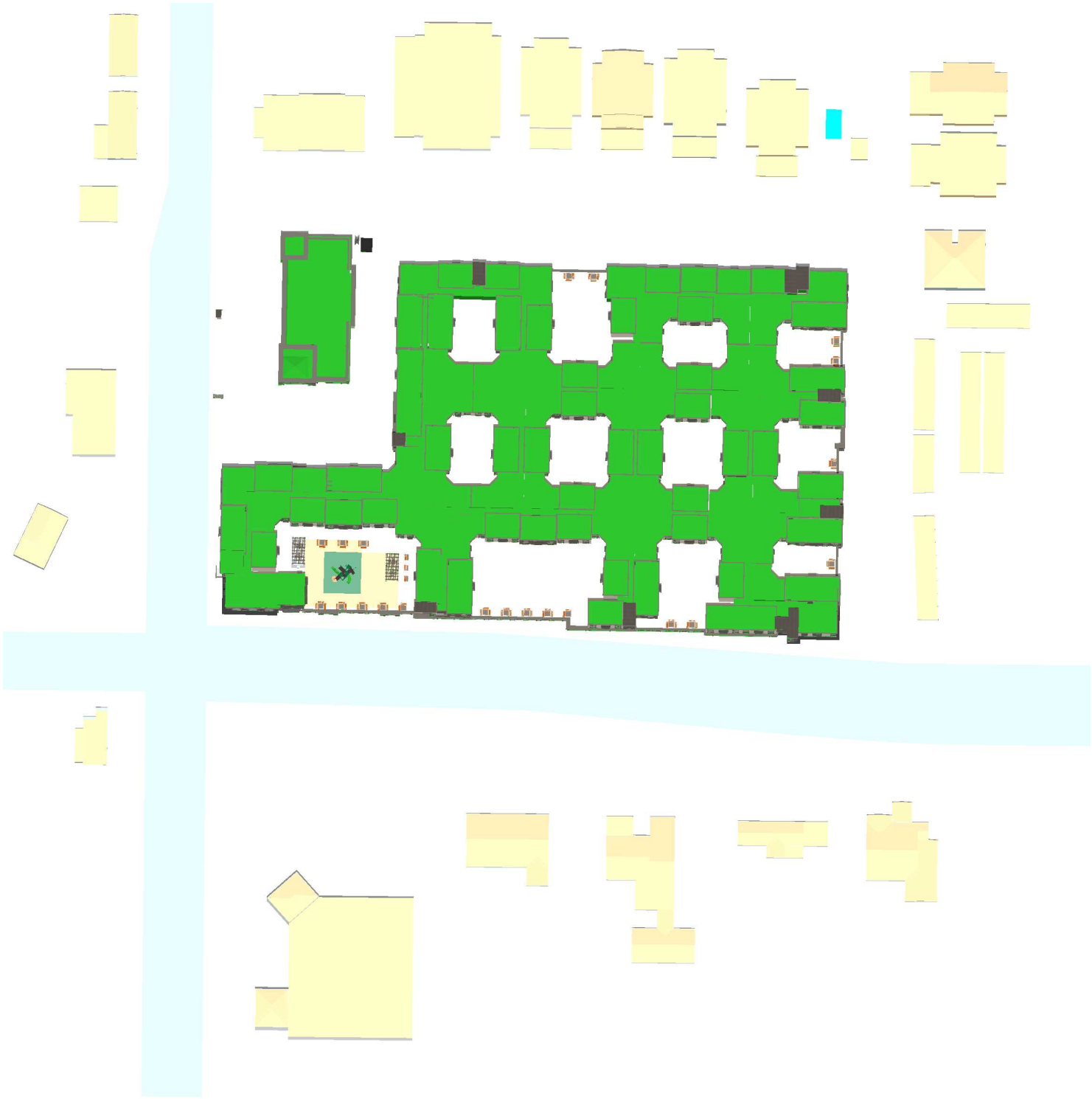
Summer Solstice Shading Diagram
9 a.m.



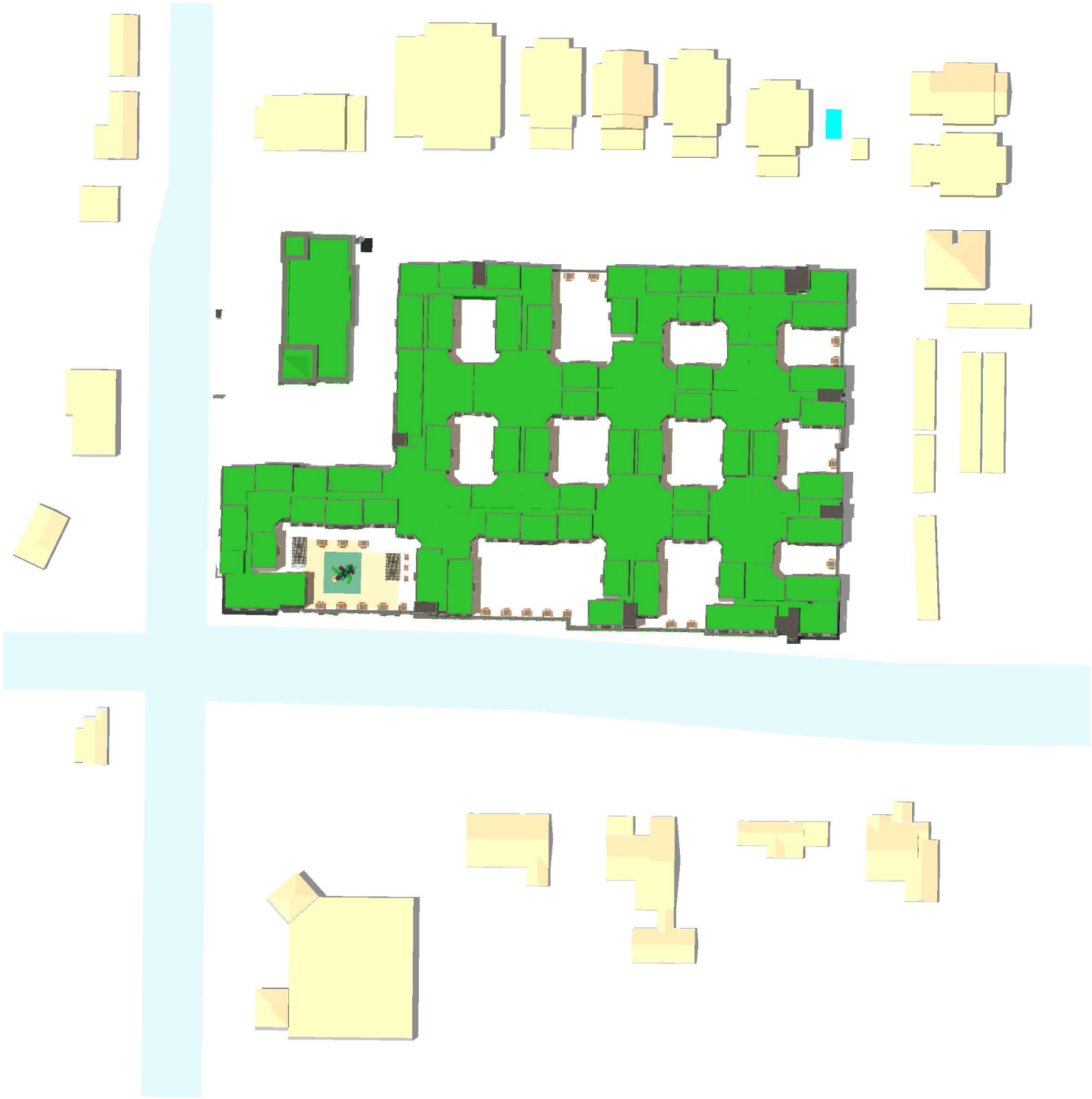
Summer Solstice Shading Diagram
10 a.m.



Summer Solstice Shading Diagram
11 a.m.



Summer Solstice Shading Diagram
Noon



Summer Solstice Shading Diagram
1 p.m.

Summer Solstice Shading Diagram
2 p.m.

Summer Solstice Shading Diagram
3 p.m.

Summer Solstice Shading Diagram
4 p.m.