# **SHADOW STUDY**

115 WATSON PARKWAY, GUELPH, ON

#### **PROPOSAL DETAILS**

Lot Area: 64,486.2 M<sup>2</sup>
Gross Floor Area: 72,070.2 M<sup>2</sup>

Building Height of tallest

building (MPH floor): 35.4 M

#### SITE CONDITIONS

The following shadow studies demonstrates the shadow impacts of the proposed development during the Spring, Fall, Summer, Winter on the dates & times as shown. Daylight savings time is being considered and accounted for.

The shadow impact study is required to take place from 8:00am until 7:00pm at hourly intervals at the times and dates specified per the the Sun and Shadow Study Terms of Reference by the City of Guelph, dated May 2019. Daylight savings is taken into consideration during the shadow studies as per the parameters used in the observation software but an additional hr of observation times were added from Spring to Fall mornings as well as an extra measure of observation.

Currently, the proposed site is comprised of the follwing:

- 197 Townhouse units
- Two mixed use residential buildings

The proposed mixed use buildings are comprised as following:

- Block 1: Building A 10 storey midrise + Building B
   12 storey midrise
- Block 2: Building C 12 storey midrise + Building D 14 storey midrise

Building A+B, C+D are joined with a podium at the ground floor.

Block 1+2 buildings' consists of a combined unit total of 873 and 2,818.2 M<sup>2</sup> of commercial space on the ground floor.

The property is zoned CC-15(H) by By-law (1994)-14864 (in effect), and CMUC-9(PA)(H10)(H12) by By-law (2023)-20790 (under appeal).

#### **COORDINATIONS**

Latitude: 43°33'54.5"N Longitude: 80°12'40.2"W

SPRING April 21 Sunrise: 6:27am

April 21 Sunset: 8:11pm

SUMMER

June 21 Sunrise: 5:39am

June 21 Sunset: 9:05pm

FALL September 21 Sunrise: 7:07am

September 21 Sunset: 7:20pm

WINTER December 21 Sunrise: 8:50am

December 21 Sunset: 5:47pm

# **TEST DATES AND TIMES**

April 21: 8:00am hourly unitl 6:00pm \*
June 21: 8:00am hourly unitl 7:00pm \*
September 21: 7:00am hourly unitl 5:00pm \*
December 21: 10:00am hourly unitl 3:00pm

\*An additional hour observation included December as an extra measure of observation in addition to the settings used that use daylight savings time in the analysis software used.

#### **STUDY AREA**



SOURCE OF BASE IMAGE: cityofguelph.maps.arcgis.com

#### SOURCE OF BASE MAPPING

3D Modeling in Revit was used with sun exposure parameters as per the location data & coordinates as shown here.

TURNER **FLEISCHER SHADOW STUDY LEGEND** UNDER CONSTRUCTION BUILDING PROPOSED DEVELOPMENT PROPOSED DEVELOPMENT **OUTDOOR AMENITY Guelph Watson Holdings Inc. SHADOW STUDY - SUMMARY** 

PROJECT NO.
22.028FS
PROJECT DATE
2023-10-23
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# **SHADOW STUDY**

115 WATSON PARKWAY, GUELPH, ON

#### **ANALYSIS CRIERIA**

The proposed development **MEETS** the following criteria as per the Sun and Shadow Study Terms of Reference by the City of Guelph if:

- 1. Residential Amenity Spaces Met if Incremental Shadows occur for no more than two consecutive test times.
- **2. Children's Play Spaces** Met if the Sun Access Factor is at least 50% on each of the test dates.

Incremental Shadows cast on any school yards, tot-lots, play areas and park features shall be assessed.

#### 3. Public Realm

- 3.1 Public Realm (Sidewalks) Met if no Incremental Shadow on opposite sidewalks at 12, 1, and 2pm and at any two consecutive times in each of AM and PM groups or three (3)consecutive times in either the AM or PM group.
- 3.2 Public Realm (Public Open Space & Plazas) Met if Sun Access Factor is at least 50% on September 21. Incremental Shadows cast on public open spaces or plazas shall be assessed.
- **4. Community Gardens and Public Park Gardens Met** if full sun provided on any 7 test times on September 21.
- **5. Cultural Heritage Resources** Met if no incremental shadows fall on identified cultural heritage resources on any of the test dates and times (\*Notes: Impacts assessed on case-by-case basis).

## **VISUAL CRITERIA REVIEW**

The proposed development **MEETS** the following criteria as per the Sun and Shadow Study Terms of Reference by the City of Guelph:

## 1. Residential Amenity Spaces:

Outdoor amenity spaces at the roof tops adhere to criteria 1, whereas amenity areas situated atop podium levels between buildings do not directly adhere to criteria 1. To address this issue, we thoughtfully incorporated other outdoor amenities into various locations across the site, including rooftop areas of the apartment buildings and amenities at ground level. These areas were designed to ensure the consistent availability of at least one of these amenities with minimal shadow impacts throughout the day.

2. Children's Play Spaces Public Realm (Public Open Space & Plazas):

A children's play area is envisioned for the eastern side of the proposed park, meticulously designed to guarantee the absence of any shadow throughout all testing times.

- 3. Public Realm (Sidewalks) as following:
- 3.1.1 No incremental shadows impact the opposite sidewalks at the requested times on 12pm, 1pm and 2pm in the dates selected from the study.
- 3.1.2 Providing three consecutive times in the PM group for the dates required as following:
- 1. Spring 3pm 5pm (3hr)
- 2. Winter 12pm 2pm (3hr)
- 3. Summer 3pm 5pm (3hr)
- 4. Fall 3pm 5pm (3hr)
- 3.2 Public Realm (Public Open Space & Plazas):

There are no public open spaces or Plazas in the vicinity of the proposed development.

- **4. Community Gardens and Public Park Gardens**No shadow impact on proposed public park in September 21<sup>st</sup>:
- 4.1 Hammill park is located to the West of the proposed development where only incremental shadows at 09:00 AM impacts the park, No impact during the rest of the test times on the park.
- 4.2 Proposed park located to the East of the proposed development isn't impacted by the shadows of the buildings applicable to the shadow study criteria.

# 5. Cultural heritage resources:

There are no cultural heritage buildings or landmarks in the vicinity of the proposed development.

#### **OBSERVATIONS**

The proposed development shows the following:

- Impact of shadows on the residential buildings and public library West from the development during the following:
- 1. Spring 8AM 10AM (2hr)
- 2. Winter 10AM 11AM (1hr)
- 3. Summer 8AM 10AM (2hr)
- 4. Fall 9AM 11AM (2hr)
- Impact of shadows on the residential building North from the development during the following:
- 1. Winter 1PM 3PM (2hr)
- 2. Fall 4PM 5PM (1hr)

#### **RESULTS**

Outdoor amenity spaces at the roof tops adhere to criteria 1, whereas amenity areas situated atop podium levels despite not directly adhering to the criteria 1 the development is proposing multiple outdoor amenity locations across the site, including rooftop of the buildings and various locations at grade including areas on the south of the property to ensure consistent availability of an amenity without any shadow casted for the residents of the apartment buildings during requested test times.

The Net new shadows generated by the proposed development are not expected to have detrimental impacts on the adjacent sidewalks, existing recreational zones, or private and communal outdoor amenity spaces within the specified time frames outlined in the City of Guelph's Terms of Reference.

To elaborate, the sidewalk areas located opposite the subject site on Watson Parkway North will experience a maximum of one consecutive hour of shadow coverage from the proposed development during the autumnal equinox.

In light of these findings, the sun and shadow study results affirm that the subject site will produce shadows that conform to the acceptable criteria set forth in the City of Guelph's Terms of Reference.

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DATE DESCRIPTION

⊤ Guelph Watson Holdings Inc

115 WATSON PARKWAY, GUELPH, ON

SHADOW STUDY - SUMMARY

PROJECT NO.

22.028FS

PROJECT DATE

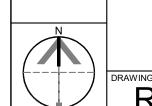
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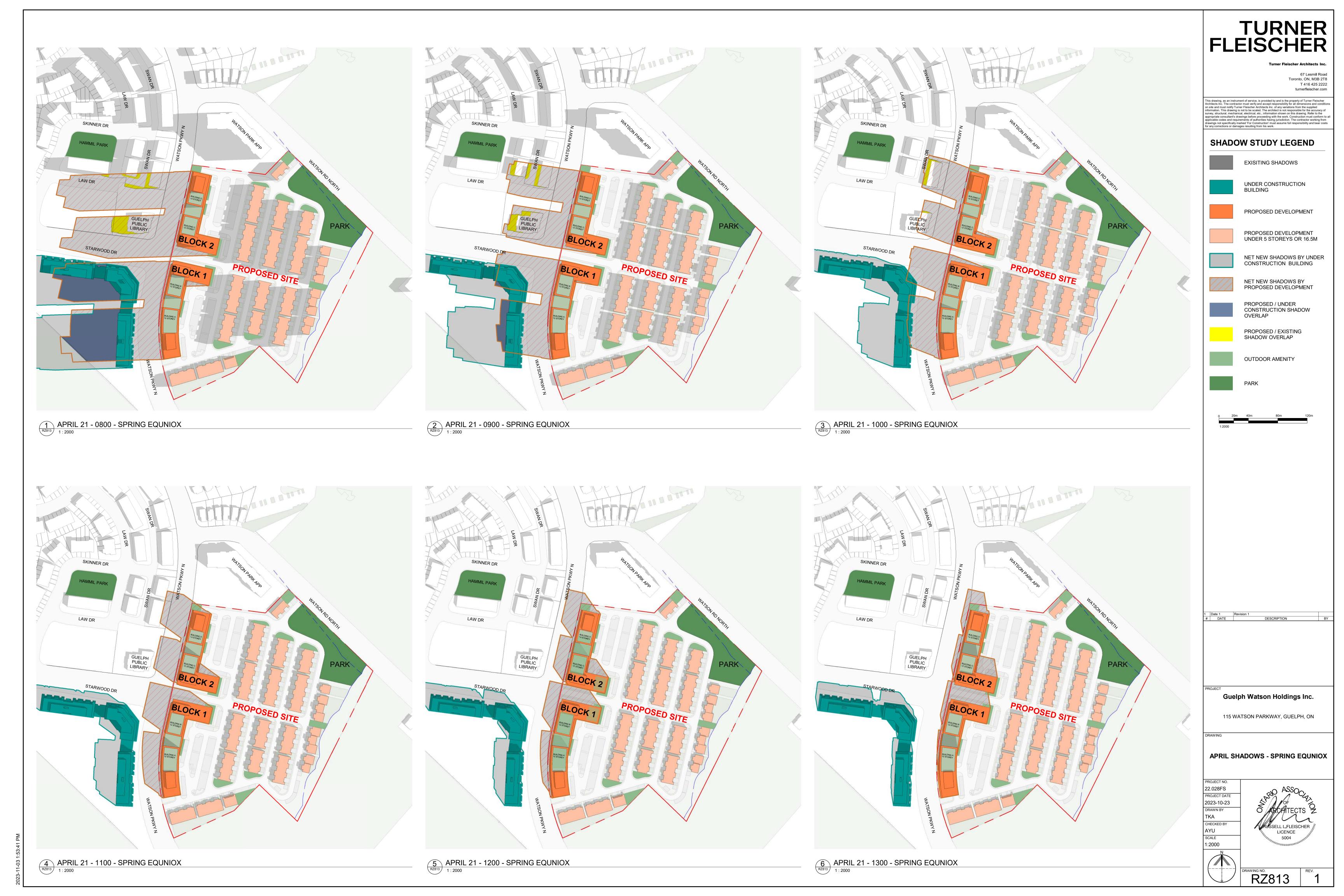
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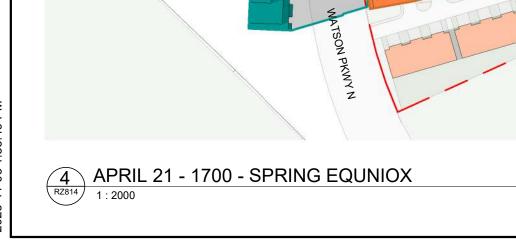






2 APRIL 21 - 1500 - SPRING EQUNIOX 1: 2000





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5 APRIL 21 - 1800 - SPRING EQUNIOX 1:2000

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<sup>cτ</sup> Guelph Watson Holdings Inc.

115 WATSON PARKWAY, GUELPH, ON

DRAWING

APRIL SHADOWS - SPRING EQUNIOX

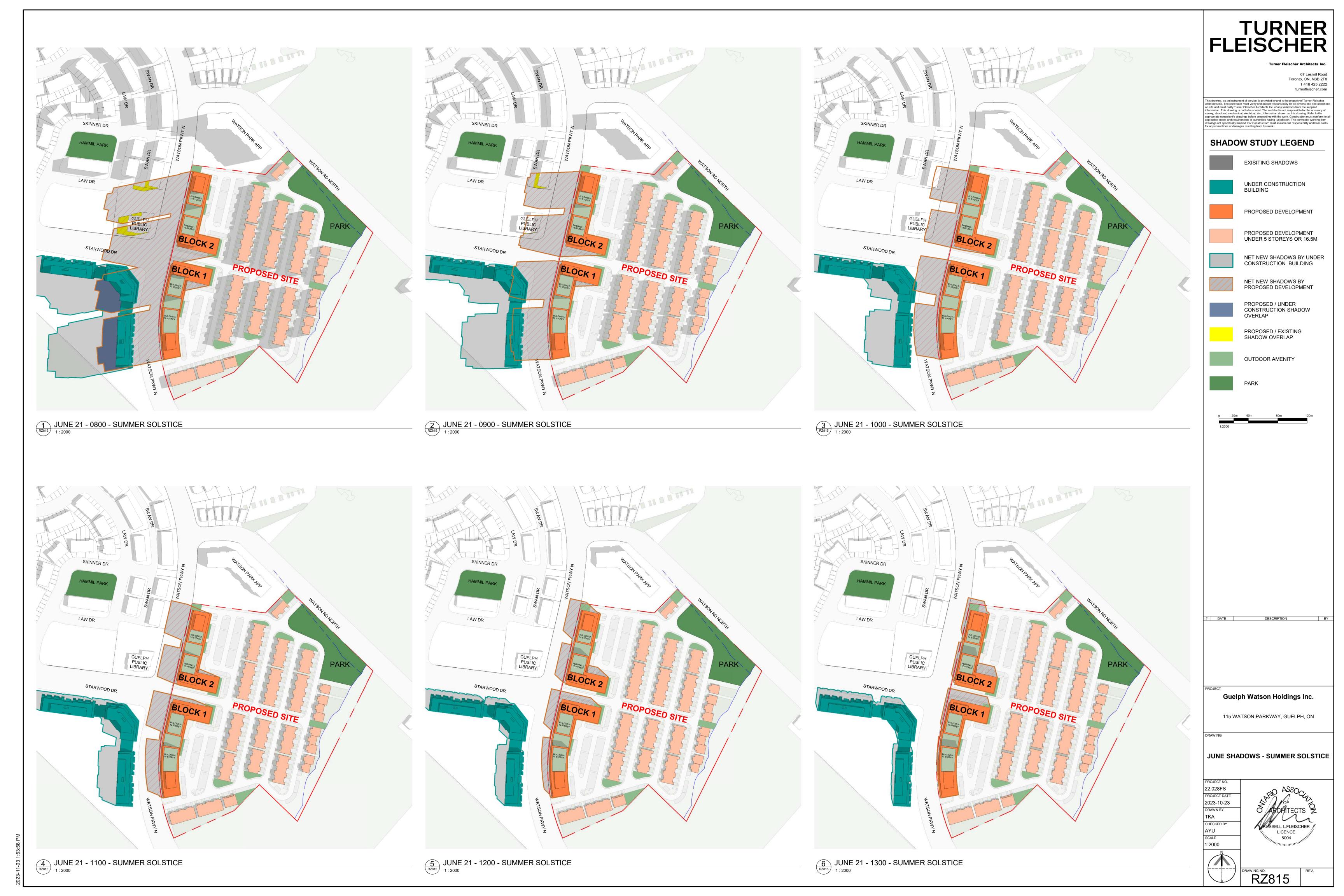
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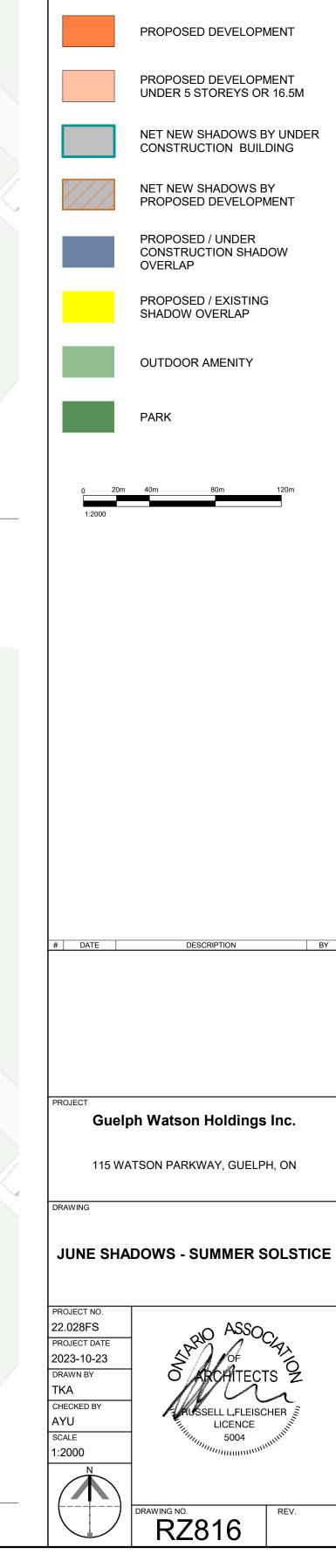




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SHADOW STUDY LEGEND

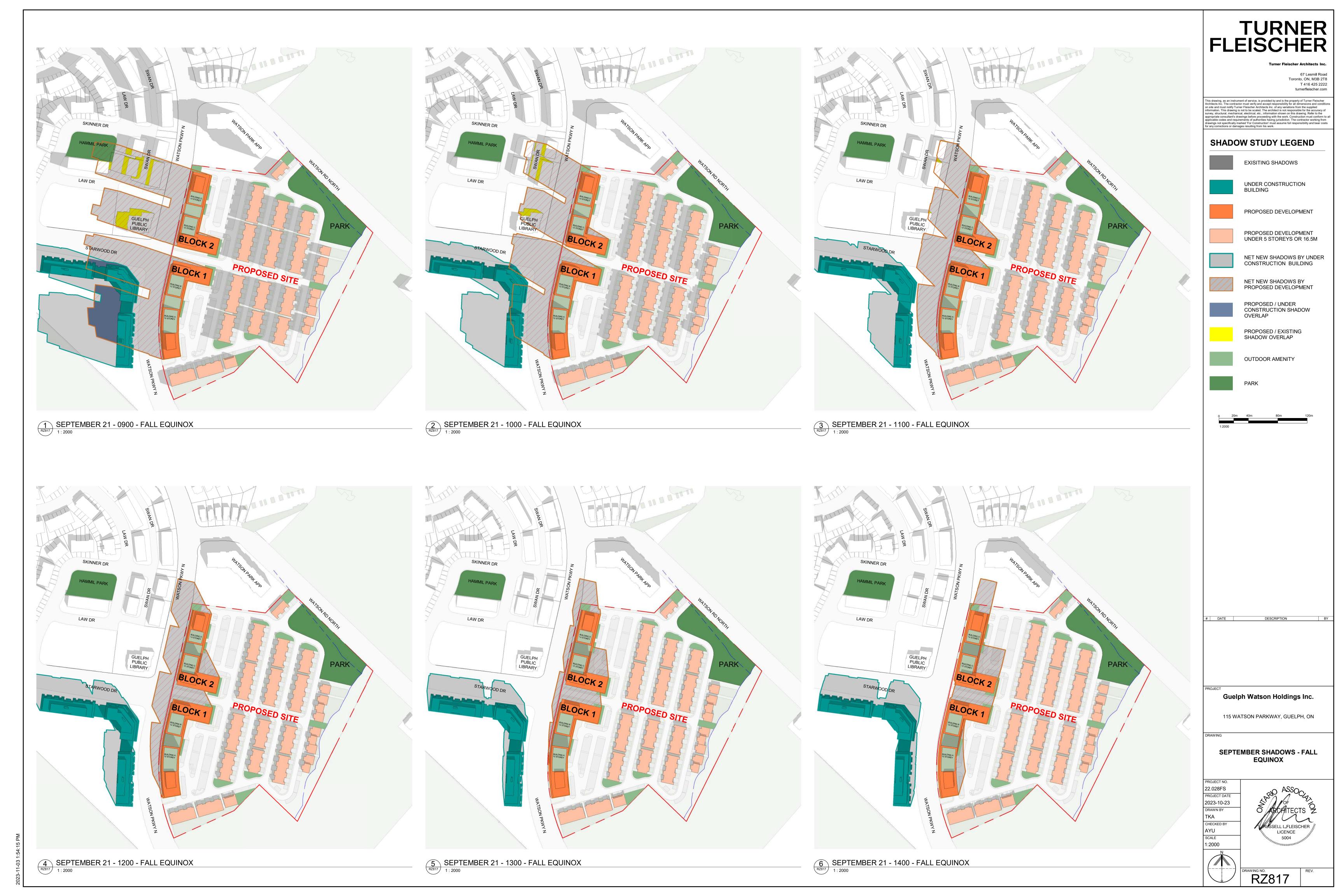
BUILDING

EXISITING SHADOWS

UNDER CONSTRUCTION

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3 SEPTEMBER 21 - 1700 - FALL EQUINOX 1 : 2000



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#### SHADOW STUDY LEGEND

EXISITING SHADOWS

UNDER CONSTRUCTION BUILDING

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT UNDER 5 STOREYS OR 16.5M

NET NEW SHADOWS BY UNDER CONSTRUCTION BUILDING NET NEW SHADOWS BY

PROPOSED DEVELOPMENT

PROPOSED / UNDER CONSTRUCTION SHADOW OVERLAP

PROPOSED / EXISTING SHADOW OVERLAP

OUTDOOR AMENITY

# DATE DESCRIPTION

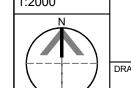
Guelph Watson Holdings Inc.

115 WATSON PARKWAY, GUELPH, ON

SEPTEMBER SHADOWS - FALL EQUINOX

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