Subject: FW: Webform submission from: Written Comments Submission Form
Attachments: 6531 Olympia Place - looking towards the East.jpg; Shade Calculations.docx; Shade Sketch.pdf

From: City of Prince George <noreply@princegeorge.ca>
Sent: Monday, July 14, 2025 11:59 AM
To: cityclerk <cityclerk@princegeorge.ca>
Subject: Webform submission from: Written Comments Submission Form

CITY OF
PRINCE GEORGE

Written Comments Submission Form

Submitted on Mon, 07/14/2025 - 11:57

Contact Info

Contact Info
Suzanne Field
6531 Olympia Place
PRINCE GEORGE
Redacted

Comments

For which application would you like to provide comments? (One form per application)
VP100701 - 6531 Olympia Place

Comments
Hello,

As owners of 6531 Olympia Place, we felt it necessary to communicate that we have thought about the impacts of the structure on the adjacent property in regards to shade projection.

We have completed the calculations to determine that the shade projected by a 15' structure would range from 10.9' to 9' from the May 1st to September 1st growing season in Prince George. With the shortest shadow at summer solstice when the sun is highest in the sky. (see attached summary).

We have also compared that to a 6' tall fence which we plan to build. When you consider the additional impact of the building beyond the fence, the impacts are fairly minimal. There will only be an additional 3' of shade beyond the fence for a 40' length (120sqft). Also consider that the neighbor's property is 0.76 acres (33,105 sqft) that is 0.4% of the gross area of the property.

As shown on the attached image, the structure will be placed in this area. The grass line is 2' from the property line, the orange string line is 1' from the property. It is evident that the green house is located approximately 1' on our property, and it is not set back the minimum of 4' from the property line as per zoning requirements.

We have attempted to discuss our plans with the adjacent house, however, they have not been willing to communicate with us.

Hopefully this helps to provide more context to our variance request.

Thank you for your time and consideration,

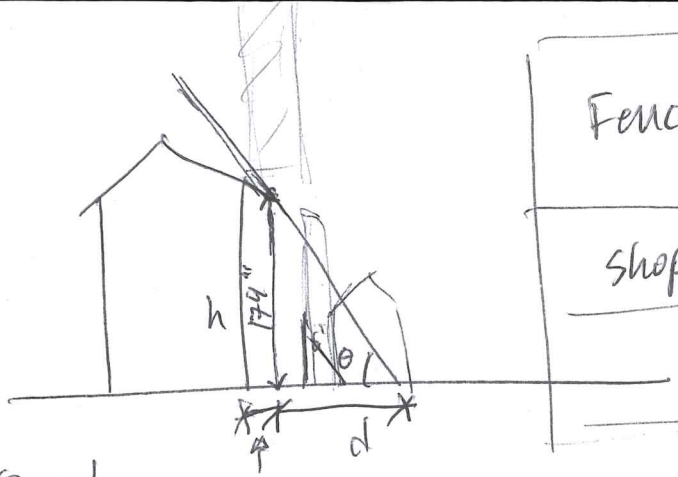
Kind regards,

Suzanne Field

Supporting Documents

- 6531 Olympia Place - looking towards the East.jpg
- Shade Calculations.docx
- Shade Sketch.pdf

I acknowledge and agree that my submission, including my full name and address, will be published on the City's website as part of the Council meeting agenda. This information will be part of the official public record, and once published, it cannot be removed or edited. Additionally, my submission may appear in internet search engine results.
Yes



Fence 6' high $d = \frac{72"}{\tan 58°} = 45"$ into property

shop - Fence $= 84\text{-}3/4 - 45" = 39\text{-}3/4"$

∴ there is only an extra 3' of shade due to shop.

$\tan\theta = \frac{h}{d}$

$d = \frac{h}{\tan\theta} = \frac{174"}{\tan 58°}$ $= 108" - 24"$ (to property line) $= 84\text{-}3/4" \approx 7'$ due to shop.

To calculate the extent of the shade projected on the ground from a 15-foot tall structure in Prince George, BC, Canada, on May 1, 2025, at noon, we need to:

1. Determine the **solar elevation angle** at noon.
2. Use the height of the structure and the solar elevation angle to calculate the **length of the shadow** on the ground.

1. Solar Elevation Angle

The solar elevation angle at noon depends on the latitude of the location and the date. Prince George, BC, has a latitude of approximately 53.9° N.

The formula for calculating the solar elevation angle at noon is:

Solar Elevation=90∘−|Latitude−Solar Declination|Solar Elevation=90∘−|Latitude−Solar Declination|

The **solar declination** (the angle of the Sun relative to the equator) can be approximated for May 1st using a general formula or by looking up the precise value for that day. Let's assume the solar declination for May 1st is about +17.9° (this is a typical value for early May in the northern hemisphere).

So, the solar elevation angle at noon would be:

Solar Elevation=90∘−|53.9∘−17.9∘|=90∘−36∘=54∘Solar Elevation=90∘−|53.9∘−17.9∘|=90∘−36∘=54∘

2. Shadow Length

To calculate the shadow length, we can use the following formula:

Shadow Length=Height of the Structuretan⁡(Solar Elevation Angle)Shadow Length=tan(Solar Elevation Angle)Height of the Structure

Given that the height of the structure is 15 feet, and the solar elevation angle is 54°:

Shadow Length=15 fttan⁡(54∘)Shadow Length=tan(54∘)15 ft

Let's calculate that.

Calculation

tan⁡(54∘)≈1.376tan(54∘)≈1.376

So,

Shadow Length=151.376≈10.9 feetShadow Length=1.37615≈10.9 feet

Conclusion:

The shadow projected by a 15-foot tall structure in Prince George, BC, on May 1, 2025, at noon would be approximately **10.9 feet** long.

To calculate the extent of the shade projected by a 15-foot tall structure in Prince George, BC, Canada, on July 1, 2025, at noon, we'll follow the same steps as before but adjust for the new date.

1. Solar Elevation Angle

The solar elevation angle at noon is determined by the latitude of the location and the solar declination. The latitude of Prince George is approximately 53.9° N.

On July 1, the **solar declination** is typically around +23.1° (close to the summer solstice, which occurs around June 21).

The formula for the solar elevation angle at noon is:

Solar Elevation=90∘−|Latitude−Solar Declination|Solar Elevation=90∘−|Latitude−Solar Declination|

So,

Solar Elevation=90∘−|53.9∘−23.1∘|=90∘−30.8∘=59.2∘Solar Elevation=90∘−|53.9∘−23.1∘|=90∘−30.8∘=59.2∘

2. Shadow Length

We will again use the formula for the shadow length:

Shadow Length=Height of the Structuretan⁡(Solar Elevation Angle)Shadow Length=tan(Solar Elevation Angle)Height of the Structure

Given that the height of the structure is 15 feet, and the solar elevation angle is 59.2°:

Shadow Length=15 fttan⁡(59.2∘)Shadow Length=tan(59.2∘)15 ft

Calculation

tan⁡(59.2∘)≈1.664tan(59.2∘)≈1.664

So,

Shadow Length=151.664≈9.0 feetShadow Length=1.66415≈9.0 feet

Conclusion:

On July 1, 2025, at noon, the shadow of a 15-foot tall structure in Prince George, BC, will be approximately **9.0 feet** long.

To calculate the extent of the shade projected by a 15-foot tall structure in Prince George, BC, Canada, on September 1, 2025, at noon, we'll follow similar steps but adjust for the new date.

1. Solar Elevation Angle

The solar elevation angle at noon is determined by the latitude of the location and the solar declination. The latitude of Prince George is approximately **53.9° N**.

On **September 1**, the **solar declination** is typically around **+7.0°** (the autumn equinox occurs around September 23, and the declination gradually shifts toward 0° as we move toward the equinox).

The formula for the solar elevation angle at noon is:

Solar Elevation=90∘−|Latitude−Solar Declination|Solar Elevation=90∘−|Latitude−Solar Declination|

So,

Solar Elevation=90∘−|53.9∘−7.0∘|=90∘−46.9∘=43.1∘Solar Elevation=90∘−|53.9∘−7.0∘|=90∘−46.9∘=43.1∘

2. Shadow Length

To calculate the shadow length, we use the formula:

Shadow Length=Height of the Structuretan⁡(Solar Elevation Angle)Shadow Length=tan(Solar Elevation Angle)Height of the Structure

Given that the height of the structure is 15 feet, and the solar elevation angle is 43.1°:

Shadow Length=15 fttan⁡(43.1∘)Shadow Length=tan(43.1∘)15 ft

Calculation

tan⁡(43.1∘)≈0.932tan(43.1∘)≈0.932

So,

Shadow Length=150.932≈16.1 feetShadow Length=0.93215≈16.1 feet

Conclusion:

On **September 1, 2025**, at noon, the shadow of a 15-foot tall structure in Prince George, BC, will be approximately **16.1 feet** long.