

Site Specific Flood Risk Assessment

Bowman Chilled Stores – Solar PV

This report has been completed in line with the **Site Specific Flood Risk Assessment Checklist** published by the Ministry of Housing, Communities & Local Government. The proposed development complies with the **South East Lincolnshire Local Plan 2011-2036**, particularly **Policy 4: Approach to Flood Risk**.

The proposed development is well aligned with the South East Lincolnshire Local Plan Strategic Priorities.

In particular the proposal will contribute to -

Priority 1. “deliver sustainable development”

Priority 3. “green infrastructure”

Priority 4. “meet the needs of existing businesses”

Priority 8. “To minimise the impact of ... climate change by making more sustainable use of land and resources”

Priority 9. “To promote the more efficient use of land”

1 - Development site and location

The proposed site is on the roof of the existing Bowman Chilled Stores (BCS) depot building. See “Environment Agency - Flood map for planning”.

Address: Bowman Chilled Stores, Marsh Road, Spalding, Lincolnshire, PE12 6HA

52°48'10.41"N 0° 7'36.31"W

The site is located in flood zone 3a, an area with a high probability of flooding.

2 - Development proposals

The proposed development consists of an array of solar panels covering the majority of the roof area of the depot building at BCS. The panels will be located between 10m and 17m above ground level.

Although this site use isn't explicitly listed in the Environment Agency “Flood risk vulnerability classification” it seems to fall in the “Less vulnerable” category and is therefore an “appropriate” development.

The expected lifetime of the system is 25-35 years.

3 - Sequential test

As BCS are aiming to produce their own renewable electricity and their whole site is within flood zone 3a, it is not possible for development to be located in a zone with a lower risk of flooding. As re-location of the site is not possible the requirements of an “exception Test” must be met (see section 8)

4 - Climate Change

Due to the height above ground level of the equipment the risk of damage from flooding remains very low even with the extra risks posed by climate change.

By generating zero carbon electricity the proposed development will play a part in slowing climate change.

5 - Site specific flood risk

The height of the proposed installation removes the site from any realistic flooding risk.

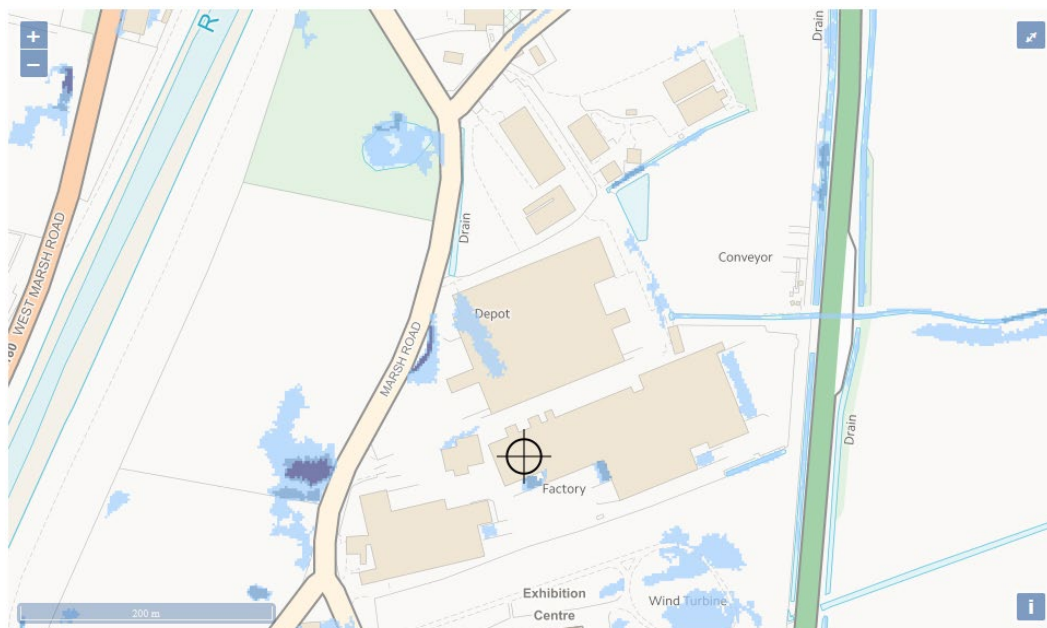
Below is a summary of the flood risk and extent of potential flooding to the BCS depot building.

The Environment Agency categorises the risk of flooding for “BOWMAN STORES LTD, MARSH ROAD, SPALDING, PE12 6HA” as follows:

	Surface water
	Medium risk
	Rivers and the sea
	Very low risk

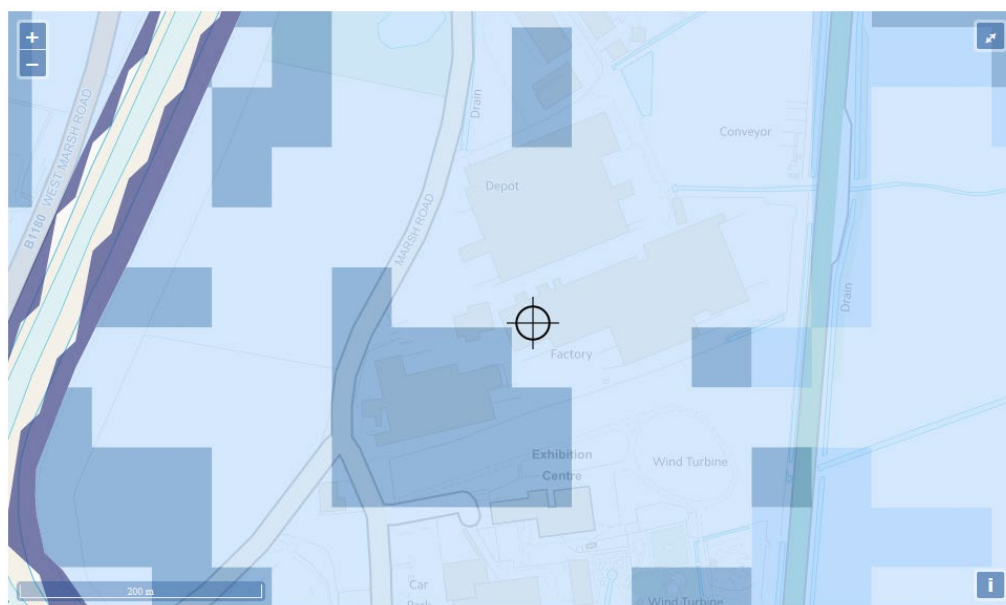
<https://flood-warning-information.service.gov.uk/long-term-flood-risk/risk?address=10002541234>

The map below shows the extent of potential flooding from surface water. The majority of the depot building is shown as “very low” extent of flooding with a small area of “low”.



<https://flood-warning-information.service.gov.uk/long-term-flood-risk/map?easting=526368.11&northing=324354.71&address=10002541234&map=SurfaceWater>

The map below shows the extent of potential flooding from river or sea water. The majority of the depot building is shown as “very low” extent of flooding with a small area of “medium”.



<https://flood-warning-information.service.gov.uk/long-term-flood-risk/map?easting=526368.11&northing=324354.71&address=10002541234&map=RiversOrSea>

The nearest site where river water level is measured is -

Station name: Marsh Road Sluice

Station ID: 6018

River name: River Welland

Typical range: 0.95m to 1.45m

Highest level on record: 2.58m on 11 April 1998

Site datum: 1.71mAOD

“When the water level reaches 1.45m here, minor flooding is possible in this area”

<https://flood-warning-information.service.gov.uk/station/6018?direction=u>

As the BCS building is approximately 4m AOD with the site of the proposed solar being at least 10m higher we can conclude that the proposed site is not at risk of flooding.

6. Surface water management

As the proposed site is on the roof of an existing building there will be no change to the amount or speed of water run-off from the completed development and therefore no impact elsewhere.

7. Occupants and users of the development

The proposed development will be solely for the generation of solar electricity and therefore will not add any occupants or users to the site.

8. Exception test

“the development will provide wider sustainability benefits to the community that outweigh the flood risk”

The Proposed development will be at no meaningful risk of flooding. The solar installation will deliver electricity savings to BCS and benefits to the community in the form of cleaner air.

“the development will be safe for its lifetime, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.”

Due to the height of the proposed system above ground level the development will be safe from flooding for its lifetime.

By generating zero carbon electricity the proposed development will play a part in slowing climate change, therefore reducing flood risk overall.

9. Residual risk

As the site is located between 10m and 17m above ground level the risk directly posed to the site due to flooding is very low. The only plausible indirect risk is that live parts of the system may pose a risk to emergency services or other personnel accessing the BCS building in the event of flooding.

Risk

Live equipment posing a risk to persons on site in case of flooding

Mitigation

Solar inverters automatically switch off in event of loss of mains power.

Clearly labelled DC and AC isolators will be installed allowing the system to be turned off independently of the mains supply.

DC cables and junction boxes will be clearly labelled to warn of the presence of live DC electricity during daylight hours.

10. Flood risk assessment credentials

Flood Risk Assessment carried out on 13th July 2020 by James Mackinnon on behalf of Solar Advanced Systems.