Reducing climate change risks for Marks and Spencer’s UK stores
Context

Climate change can be described as a large scale, long-term increase in average global temperatures due to greenhouse gas emissions. The resulting changes to the global climate system are influencing weather patterns and events around the world. The UK has experienced the consequences of more frequent and intense extreme weather events such as flooding of the Somerset Levels due to heavy rain and the Dawlish railway-line collapse due to coastal storms. Just like homeowners and the traveling public, businesses are having to face up to this new reality.

Like many other retailers Marks and Spencer (M&S) are responsible for a significant amount of property, people and products – all of which are potentially at risk from heavy rain, extreme temperatures, high winds, storms and flooding. M&S are not dealing with some ‘what if’ scenario. Climate change impacts are real and happening already.

Despite M&S being aware of the issues, passionate about good store design and committed to high standards of operation and employee and customer welfare, there is still no escape. In the last decade, weather-related incidents have affected M&S' buildings. Future projections show an increase in annual heat waves and more days of heavy rainfall. Warmer, drier summers and milder, wetter winters along with rising sea levels are expected to lead to an increase in the sorts of climate change related events M&S have started to see across its stores. Furthermore, the recent proposals from the Task Force on Climate-related Financial Disclosures, highlight the need for businesses to disclose the climate risks they face.

Future climate change projections in the UK

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<tr>
<th>Annual Number of Heatwaves</th>
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<td>Baseline</td>
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<td>&gt;1</td>
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(2 days with max daily temp of >29°C and min of >15°C)

<table>
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<tr>
<th>Annual Number of Days of Heavy Rain</th>
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<td>Baseline</td>
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<td>3</td>
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(Met Office definition: No. of days when precipitation is greater than 25mm per day)

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<tr>
<th>Climate Change Projections</th>
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<td>Warmer, drier summers</td>
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With this in mind, M&S have identified a number of climate change related risks and opportunities for the estate, and through its sustainability programme, Plan A, have two commitments to address these.

- Top 50 store climate adaptation: M&S will review possible adaptations to climate change at our ‘Top 50’ UK stores and develop a plan to implement by 2020.
- Store development assessments: All store development investment greater than £10m will be assessed against climate change risk, whole-life cost financial evaluation and building accreditation standard review.

### RISKS

Energy management
- Security and price

Water management
- Localised and large scale flooding/ summer droughts

Internal store environment
- Staff and customer comfort levels and hygiene conditions

Building fabric
- Wind damage/ snow loading/ pipes freezing

### OPPORTUNITIES

Increased staff retention
- Reduced business disruptions
- Development of innovative products and designs

Cost savings
- Community engagement
- Long term procurement advantages
The project

In response to this context, M&S commissioned Arup to assess how climate change risks may affect M&S’ UK stores, and to develop adaptation and resilience tools and strategies to reduce those risks and increase resilience at the store level. The project had three key focus areas:

1. **The tool** – create a climate change risk assessment and mitigation tool for M&S’ UK stores.
2. **Process and procedures** – provide recommendations for changes to relevant specifications, policies and procedures.
3. **Training** – develop associated training and awareness material.

Led by Arup’s climate change adaptation and resilience specialists, the project involved collaborative working and engagement with M&S’ business leaders (covering facilities management, estate management, property development, business continuity, engineering, legal and insurance) and specialist teams within Arup (covering sustainable building design, operational consulting and cost management). Key external stakeholders including M&S’ landlords, the Environment Agency, UK Green Building Council and Public Health England, were also engaged through a series of facilitated workshops.

### The climate change risk assessment and mitigation tool

The climate change risk assessment and mitigation tool helps M&S determine where climate change risks are most likely to affect its stores. The tool will support M&S in taking measures to reduce the impacts of climate related events. It displays a large amount of complex information in a simple user friendly dashboard format.

Data included in the tool:

- Store information
- Current and future climate risk data for:
  - Water stress
  - Flooding (including surface water)
  - Extreme temperatures
- Previous M&S data on stores impacted by extreme temperature
- Mitigation options including cost ranges for installation.

### Process and procedures

Arup reviewed a number of M&S’ specifications, policies and procedures and identified opportunities to further embed resilience into store design, facilities management, and business continuity. Recommendations for new weather and climate change resilience clauses in the design specifications for new and refurbished stores, as well as enhancements to adverse weather policies and procedures have been made.

### Training

Training and awareness material in the form of three e-learning modules have been developed to ensure M&S employees have a good understanding of the main climate change risks facing M&S, are able to use and interpret the tool effectively, and have a clear understanding of changes to specifications, policies and procedures that have been made as part of the project.
Recommendations and next steps

In addition to the main project outputs and outcomes Arup provided a number of recommendations that M&S are now working to integrate into the way they acquire, develop and manage the store portfolio.

What Arup recommended

Integrate the climate change risk assessment and mitigation tool into the process for approving new stores.

Include an additional climate change and extreme weather clause and related sub-clauses in design specifications.

Use the climate change risk assessment and mitigation tool to identify stores that are at greatest risk of climate related events, and develop detailed action plans for these stores.

Consider which stores might be able act as ‘flood awareness hubs’ for customers in areas prone to flood risk and as ‘cooling hubs’ for customers and locations susceptible to heat risk.

What M&S have done

M&S have integrated the climate change risk and mitigation tool into M&S’ geographic information system (GIS) tool which is used to support the location planning process for new stores.

M&S have included an additional clause, as provided by Arup, in design specifications.

In progress - By March 2017, M&S will have developed climate change adaptation action plans for those stores that have been identified as at greatest risk by the climate change risk assessment and mitigation tool.

Following previous involvement in the Environment Agency Flood Action Campaign, M&S are in discussion with the Environment Agency about how we may be able use stores to raise awareness of flood risk with employees, customers and local communities.