

Flood Action Plan Xfit The Forge *[Draft]*

By Mike Rawlinson & Onno Bokhove (*draft Onno Tuesday 29-12-2015*)

1. Location and Owner

Kirkstall, Unit 8, Kirkstall Industrial Park, LS4 2AZ, Leeds, U.K.; flood plain between Kirkstall Road and the River Aire in Leeds.

Owner Mike Rawlinson, mobile: AAA Email: mike@crossfitleeds.com

2. Flood Wardens and Access to Premises Xfit The Forge

Mike Rawlinson as owner is the primary flood warden, and there is a reserve flood warden YYY. In case the flood warden is away, he appoints a second reserve flood warden in collaboration with the reserve flood warden (et cetera). The flood wardens have keys of the premises.

Keyholders and mobile numbers

Flood warden Mike Rawlinson:

Reserve flood warden:

Toby Turner-Thompson:

CCC:

DDD:

Mobile flood team volunteers (waivers?):

Onno Bokhove: 07 583 685 692 (ca. 30min, Apperley Bridge, 10min University of Leeds), o.bokhove@leeds.ac.uk

AA:

XX:

One extra key is available in a public location YYY, available after Mike Rawlinson or the (reserve) flood warden via the mobile telephone allows use and transfer of this key in case of a flood emergency, when no flood wardens are available (even though this should be impossible –see the above).

3. Call for Flood Action

See Appendix A for some background information.

Website links aiding in making decisions:

- 1) River level Aire at Armley Environment Agency:

<https://flood-warning-information.service.gov.uk/river-and-sea-levels>

<https://flood-warning-information.service.gov.uk/station/8009>

See also (longer time record, zoom in at Armley): <http://www.gaugemap.co.uk>

- 2) Amber or red flood warning Environment Agency (zoom in; amber-flooding is possible; red: flooding is expected, immediate action required): <https://flood-warning-information.service.gov.uk/map>

- 3) Met Office (or google appropriately), **flood warning**: <http://blog.metoffice.gov.uk>
<http://www.metoffice.gov.uk/public/weather/flood-warnings/#?tab=floodWarningsDetail>

Rainfall:

<http://www.metoffice.gov.uk/public/weather/warnings/#?tab=map&map=War>

nings&zoom=5&lon=-3.50&lat=55.50&fcTime=1451347200
google BBC weather Leeds

Action steps:

- *When the level at the Armley gauge reaches 3:50m, the gauge level is on a steep incline and rain is forecast, an alarm is made by the flood warden on duty: that is he/she calls the flood team, extends the team appropriately and makes sure they are ready for immediate action.*
- *At around 3.80m, action is taken before the water levels reach 4:00m, i.e., the action plan under section 4 is followed by calling in the stand-by flood team.*
- *The flood team is formed and called into action via facebook and/or the above telephone list with flood team volunteers.*
- *When there are no electronic data available one can monitor the river level life at the foot bridge around the corner; in the Boxing Day 2015 flood, levels rose about 15cm per hour.*
- *Members in the flood team have exchanged their mobile numbers beforehand and before the flood.*
- *Members of the flood team know where to park their cars/vehicles in a designated spot on higher grounds (TBA with a map) off the Kirkstall industrial Park.*

4. When Flood Team is Called into Action

The final alarm call for action is called by the flood warden on duty, who calls in the stand-by flood team.

(i) One person keeps an eye on the gauge records, warnings and the local rainfall data and reports to the flood warden on duty.

In order of priority (time permitting and depending on the expected flood levels, so this is a judgment call)

0. Sandbags are used when the water level is leveling off and only a minor flood is expected (but keep an eye on the gauge records).
1. When the waters start entering, the power is disconnected.
2. Sandbags are put in the men's toilet, main toilet, men's sink, main sink, sink in main hall, in the two men's urinals, in the men's shower, then also in the women's toilet and sink.
 - a. The coffee machine is disconnected and brought upstairs into the Ladies change room.
 - b. The music recorder is disconnected and brought upstairs into the Ladies change room.
 - c. The vacuum cleaner is brought upstairs.
 - d. The power cables of the screen are disconnected and tied high up.
 - e. All rowing machines are brought upstairs on the balcony next to the Ladies change room.
 - f. All soft matter, medicine balls, ab-mats, the four or more benches, the mats, the rolls are brought into the Ladies change room
 - g. All bar bells are put across the pull-up rigs and secured with rope
 - h. All ropes are roped onto the pull-up rig.
 - i. All boxes are brought upstairs in the Ladies change room.
 - j. All kettle bells are brought upstairs on the balcony.

- k. All plates are stacked in piles or placed on a newly build platform (e.g., next to the stairs at 6 feet or over).
- l. All dumbbells are brought upstairs (if this not getting too heavy???) or placed on a newly build platform (e.g., next to the stairs at 6 feet or over).
- m. All skipping ropes and plastic bars are brought upstairs, idem for writing materials.
- n. All buckets are brought upstairs: chalk, clamps on bars, clamps on rig.
- o. All furniture is brought upstairs or placed on a newly build platform (e.g., next to the stairs at 6 feet or over).
- p. The carpet in the men's room is removed and brought upstairs or placed on the new platform. Same fox boxes in men's room TBD???
- q. When the water levels require this and time permitting: all rubber mats are removed and stacked in piles, or placed on a newly build platform (e.g., next to the stairs at 6 feet or over).

5. Cleaning Up Matters

To be done.

Ask an accountant or insurance expert amongst the members.

6. Insurance action

For Mike to do; make a list of how insurance matters are resolved quickly for any next time. TBD.

7. Inform the Local Government

Inform the local government of the flood damage and future action plans.

8. Other Matters and Longer Term High-Level Storage and Electrical Units TBD

To do list:

- Make assessment of adjustments to electrical units (ask experts such Nath and co.) TBD
- Make adjustments to plumbing: any unknown piping in the floor, valves that close when pressure comes from the outside (ask experts Steve and co.) TBD
- Make an over six feet storage balcony, e.g. next to the current stairs? TBD
- Check this plan with a firefighter (Danny) and policeman amongst the members. TBD
- **Raise rowing machines up against the wall above 6ft via a pulley-hook system.**
- Check the legal aspects of this plan (with experts, e.g. the barrister Willow, amongst the members): what is the responsibility of the (reserve) flood warden for accidents of the flood team (waivers); what we did on 26-12 was potentially dangerous, given the strong currents that had developed and the toxic, dirty waters?

9. Final Comment

Last but not least: the last time river levels reached 4m or higher at Armley was in 2012, but changes in the climate (latest IPCC report) or simply the rainfall patterns, the way we have built up our urban landscape, including flood plains, have altered the river run-off patterns possibly in an adverse way. Events like the Boxing Day 2015 floods are therefore expected to occur more frequently, even though there may be long dormant periods in between individual events.

Appendix A

When is flood action required and activated?

First some background information is given regarding two flood peaks in 2015. On 26-12-2015, Xfit The Forge flooded with four feet of dirty flood river water. Two weeks earlier, on 12-12-2015 Onno Bokhove face-booked Mike Rawlinson with the question whether The Forge was still dry, regarding an earlier flood event. The water gauge at Armley reached 3.68m in that flood. Mike went to the river next to the box and reported that the water was less than 1m from reaching the top of the river bank.

On the 26th of December at 8:09am, Onno face-booked Mike with the message that the Armley gauge level was 3:61m so just below the previous high of 3.68m but the rain kept falling; Onno face-booked Mike at 10:46am that the level was now 3:90m. At 11:25am, that level was 4:01m, and the Environment Agency had issued an amber alert zone for Kirkstall Industrial Park, which had just turned into a red alarm zone (flooding imminent). Note that there seemed to be insufficient time for immediate action once the alarm zone red was announced. Onno posted a members-only alert at 11:27am asking anyone to check The Forge. Jesse Marie posted photo of the onset flooding, some puddles at 12:41pm. Hence, around the Armley river gauge level of 4:00m flooding starts, and the water rose quickly, as is evident from the steep incline in the gauge level record:

the River Aire at Armley

8:45am Tuesday 29 December 2015

Latest level

1.82m

Recorded at 8:00am Tuesday 29 December 2015

The latest information recorded at this location indicates the river is within its typical range.

5-day information for this station

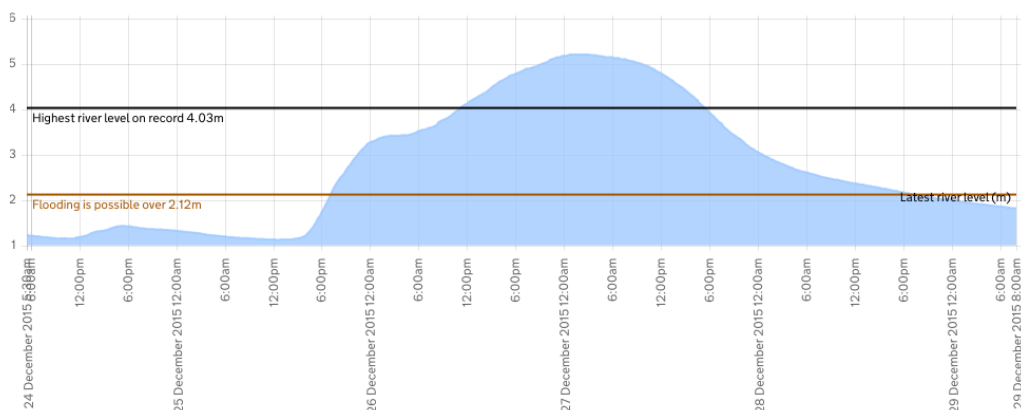


Figure 1: River Aire gauge level from 24 to 29th of December 2015. Note the steep incline from 6:00pm on the 25th, the leveling off (which was confusing but the rainfall suggested the subsequent incline) and the subsequent incline from 10am till midnight on the 26th of December.

At circa 3:30pm the level had risen to 4:35m and there was a foot of water in the Xfit premises. By the time the crew of five to seven people was finished at 17:00 the level had reached 4:70m, and the wading over Kirkstall Road had become dangerous (thigh-deep). Action should have taken place with the levels between 3:70m and 4:00m so roughly 3 to 4 hours earlier.

Rainfall over 48hrs was 70mm in Bradford, 90mm in Bingley but lesser in Skipton (Met Office data), such that from Bingley downstream all river level records were broken but not upstream in Gargrave and Skipton. That is: heavy local rain caused the flooding in Leeds and Halifax.

48hr UK RAINFALL TOTALS 9am 25 DEC - 9am 27 DEC 2015

| SITE | AREA | RAINFALL (MM) | TOTAL |
|-----------------------------|--------------------|------------------|-------|
| CAPEL CURIG | GWYNEDD | 210.6 | |
| STONYHURST | LANCASHIRE | 100 | |
| PATELEY BRIDGE, RAVENS NEST | NORTH YORKSHIRE | 97 | |
| BINGLEY | WEST YORKSHIRE | 93.6 | |
| BAINBRIDGE | NORTH YORKSHIRE | 89.8 | |
| BALA | GWYNEDD | 89.4 | |
| SHAP | CUMBRIA | 86.4 | |
| SPADEADAM | CUMBRIA | 79.4 | |
| PRESTON, MOOR PARK | LANCASHIRE | 73.2 | |
| MYERSCOUGH | LANCASHIRE | 72.4 | |
| BRADFORD | WEST YORKSHIRE | 69.4 | |
| ROCHDALE | GREATER MANCHESTER | 68.2 | |
| MORECAMBE | LANCASHIRE | 65.8 | |
| MONA | ISLE OF ANGLESEY | 63.6 | |
| KIELDER CASTLE | NORTHUMBERLAND | 61.2 | |
| DISHFORTH AIRFIELD | NORTH YORKSHIRE | 60.8 | |

This wet spell has added to the heavy rainfall through the rest of the month to make December 2015 already the wettest on record in parts of the UK.

Figure 2: <http://blog.metoffice.gov.uk> Rainfall summary 25-27 December 2015.

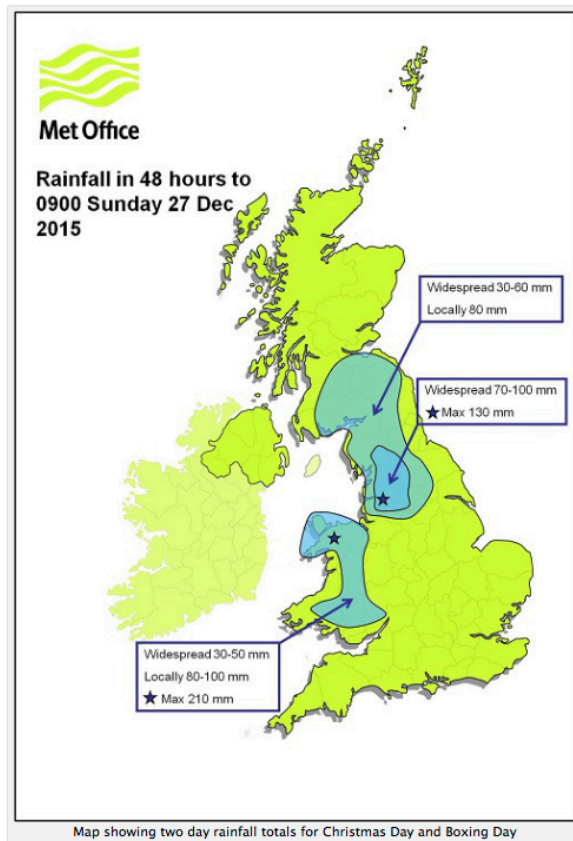


Figure 3: <http://blog.metoffice.gov.uk> Rainfall map 25-27 December 2015.

The water level inside Xfit The Forge was circa four feet (marked), so storage needs to be 5 or 6 feet and higher.