Flood Risk Assessment checklist for Local Authorities

Change of use to a 'more vulnerable' use

January 2022

Introduction

A change of use planning application which will result in a 'more vulnerable' development type will only be acceptable if it can be designed to be safe for occupants. A Flood Risk Assessment (FRA) is required to support this type of planning application.

This checklist should be used alongside the flowchart and should be read in conjunction with our standard planning advice notes for change of use or replacement dwellings and will help planning officers when determining such applications. There is also an additional document which contain examples of good data/drawings that should be submitted.

A sequential risk based approach

The Sequential Test does not apply to Change of Use applications; however, the sequential approach should be considered if applicable (e.g. which building or rooms to change).

What to look for when reviewing the Flood Risk Assessment

Officer Considerations	What to look for in the FRA & Drawings	Checklist (Y/N)
Flow Chart 1 - Box 1 FRA Knowledge Applicant is competent and using latest data.	Applicants states that they have read and followed the appropriate gov.uk flood risk guidance - www.gov.uk/guidance/flood-risk-assessment-standing-advice The FRA uses up to date information (i.e. within last 12 months)	
Box 2 Site levels These should be informed by a site topographic survey to metres above ordnance datum (mAOD) to allow flood level to be related to site level. Check drawing title/information area - it may say to scale mAOD or to site datum (m)	Has the applicant provided: • Site ground levels • Existing floor levels, proposed floor levels • River Bank height, if within site or adjacent • If not to mAOD, have they used a site datum? (which is acceptable if they use depth(m) of flooding not a level(mAOD) - in next box)	
Box 3 Best Available Flood Data Applicant should use the best available data, sourced from the EA.	Does the applicant's FRA tell you where the best flood data comes from? • Have they used EA or historical data?	

LLFA may have online flood data/ mapping available. – if so, has this been checked? In order of preference • 1 – EA approved Detailed Modelling** • 2 - Extreme tidal flood level • 3 - EA JFlow flood depths • 4 - Surface Water depth bands • 5 – Flood Photographs from EA or 'Google'. Note ** If new flood modelling is approved by EA, we will provide letter/email than it has – this must be clearly shown in the FRA.	• Have they produced their own flood model, if so, has it been approved by EA? ** **IF not approved by the EA – – the application should be refused .** • Has the applicant considered 'all source of flooding'? (i.e. Sea, River, Surface Water, Sewer, & Overland, and then stated the highest Risk)	
Box 4 & Box 5 **Design Flood Level** **This is the flood level at the end of lifetime of the COU – what is happening in 2022+?** The applicant needs to consider the follows sized storms (NPPG): River 1% Chance (100yr or Q100) 0.1% Chance (1000yr or Q1000) Tidal/sea 0.5% Chance (200yr or T200) 0.1% Chance (1000yr or T200) The FRA must also consider risks as a result of climate change over the lifetime of development. For residential development lifetime is considered to be 100 years. i.e., what will the flood risk be in the year 2121. (100yrs from now) https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances If official EA or Council Defences are present, they can consider their effects on flooding risk.	Does the applicants FRA clearly state the following? And clearly show it on the drawings or in the FRA? • **Design Flood Level from the worse flood risk plus considers the below issues:** ○ **flood water/depth level** (Box 3 results) ○ **Climate Change Level** (must be up to date allowances) ○ **Plus, wave actions in open coastline or estuaries** • **If some data is not available** ○ Instead of Waves in estuaries add 0.9m ○ Climate Change – if river data not available. ▪ Add 0.6m to 100yr or 200yr floods levels/depths ▪ Add 0.3m to 1000yr • **Items to Double Check in FRA** ○ Does the applicant tell you the how the DFL has been calculated? ○ Do they use the right sized storm – 1% or 100yr for river, 0.5% or 200yr tidal ○ Have they used the worst-case depths? if depth information is provided in 'bands'. – see examples. ○ Has applicant added flood depths to several site levels to produce an average site flood level? ○ Freeboard is added to cover any uncertainties and set design finished floor level (**FFL**)	

	• **Freeboard must be added to worse case flood to set the Target FFL (to cover uncertainties or lack of information). The minimum freeboard required is...** ○ Modelled flood data – add 0.3m ○ Tidal flood data – add 0.6m ○ JFlow – add 0.6m ○ Surface water – add 0.6m **Target FFL = Design Flood Level (Worst Flood Level [inc. waves] + Climate Change) + freeboard**	
	BASELINE DATA COMPLETE MOVE TO FLOW CHART 2 IS IT SAFE?	
Box 6 Finished Floor Levels (FFL) The applicant needs to show the flood levels to assess the flood risk and proposed FFL. The planning drawings need to clearly show this information	Does the FRA clearly show the flood information on the drawings? • Proposed FFL with a level (m or MAOD), are clearly show on the drawings (that can be approved, so not just in the FRA). • Proposed Drawings need to show Flood Depths/Levels ○ Inside the property ○ Outside the property ○ Along proposed Access/Egress route – to a suitable place on high ground.	
Box 7 Flood Mitigation Measures **How are the flood risk managed?** **In order of preference: Avoid, Reduce, Mitigate - the flood risk** **Avoid the Risk** **The aim should be to raise FFL above the flood level.**	Has the applicant provided details on the how the flood risk will be managed: flood mitigation measures? • Finished Floor Level – have these been raised above (or the same) as Target FFL (Box 6)? ○ **It is Acceptable** • If not, are the internal depths (above the proposed floor level) greater than 0.5m deep? ○ **If so, it is unsafe – the application should be refused.**	

Box 8 **Flood Mitigation Measures** **Reduce the Risk** **IF they can't raise FFL, WHY NOT?** **What's the maximum they can raised it? Every mm/cm will help.**	Has the proposed design raised FFL as high as they can, with sound justification why they can be raised above the design flood risk level? If not, are there sound technical or planning reasons? (e.g. floor to ceiling height less than 2.5m and cannot be changed, or listed building etc?) **If they have not provided justification, ask for extra information/design changes or the application should be refused**	
Box 9 & 10 **Flood Mitigation Measures** **Just Acceptable** **Internal Depths no more than 0.5m deep + flood resistant/resilience measures (Flood R&R)** **Not Safe** **Over 0.5m deep, is unsafe (significant hazard or worse)**	Are the internal flood depths (above the proposed floor level) greater than 0.5m deep? **If so, unsafe – the application should be refused** • IF flood depths are less than 0.5m, and it has been fully justified that FFL cannot be raised further (Box 8), then design is 'just acceptable' but MUST also include flood resistant and resilience measures up to the target FFL **Any flood depth over 0.5m is unsafe – the application should be refused. EA will support this stance at appeal.**	
Box 11 **Flood Mitigation Measures** **Resistant – stop water getting in** **Resilience – Reduce water damage** **Online Guidance** Flood resilient construction of new buildings - GOV.UK (www.gov.uk)	Do the planning application design details, outside of the FRA, show that Flood Resistant & Resilience will be applied? • Flood Resistance up to 0.3m depth of water – flood boards/gates, tanking walls etc, unless structural calculations are provided, then only to 0.6m max depth of flood water. • Flood resilience measures included to 0.6m above floor level, and above design flood level. • This can include raised gas and electric fittings. Non-return values on drainage pipes, water resistant materials (solid wood floor/kitchens cupboards) • Does applicant say that it is in line with online guidance (see link opposite), and WILL it BE done? **If not, application should be refused**	
Box 12 **Flood warning, evacuation and safe refuge** It will be for the council's emergency planners to determine whether refuge and evacuation proposals are safe and acceptable ADEPT/EA Flood Risk Emergency Plans for New Development | ADEPT (adeptnet.org.uk).	Has the applicant read and said that they will provide a Safe Plan in line with ADEPT guidance (see link)? • Has applicant provided a map with an evacuation route? • Has the applicant provided the worse depth/hazard along the route? • Will access/egress be safe for occupants during a flood event? i.e., low hazard or depth below 0.3m • Has the applicant stated how long the flooding will last, perhaps in the following bands?	

Note: this should assess the overtopping of defence, PLUS how long it will take to drain away. – not the time of the tide or river flood 'wave'. Safe refuge must be at least 2m above the largest flood level, and assessable at all times. Applicants need to consider/state if a general flood alert or flood warning is available.	○ Less than 2hrs, ○ greater than 2hrs ○ greater than 6hrs ○ greater than 12hrs • Can safe refuge for occupants be provided during a flood event for its duration? This need to be well above worse flood conditions. • Can flood warnings be provided to future occupants? Have they check the EA flood warning service and committed to signing up?	
Conclusions	• Has the FRA demonstrated that the proposal: ○ Will be safe for occupants over the lifetime of the development? ○ A safe route or refuge is available?	

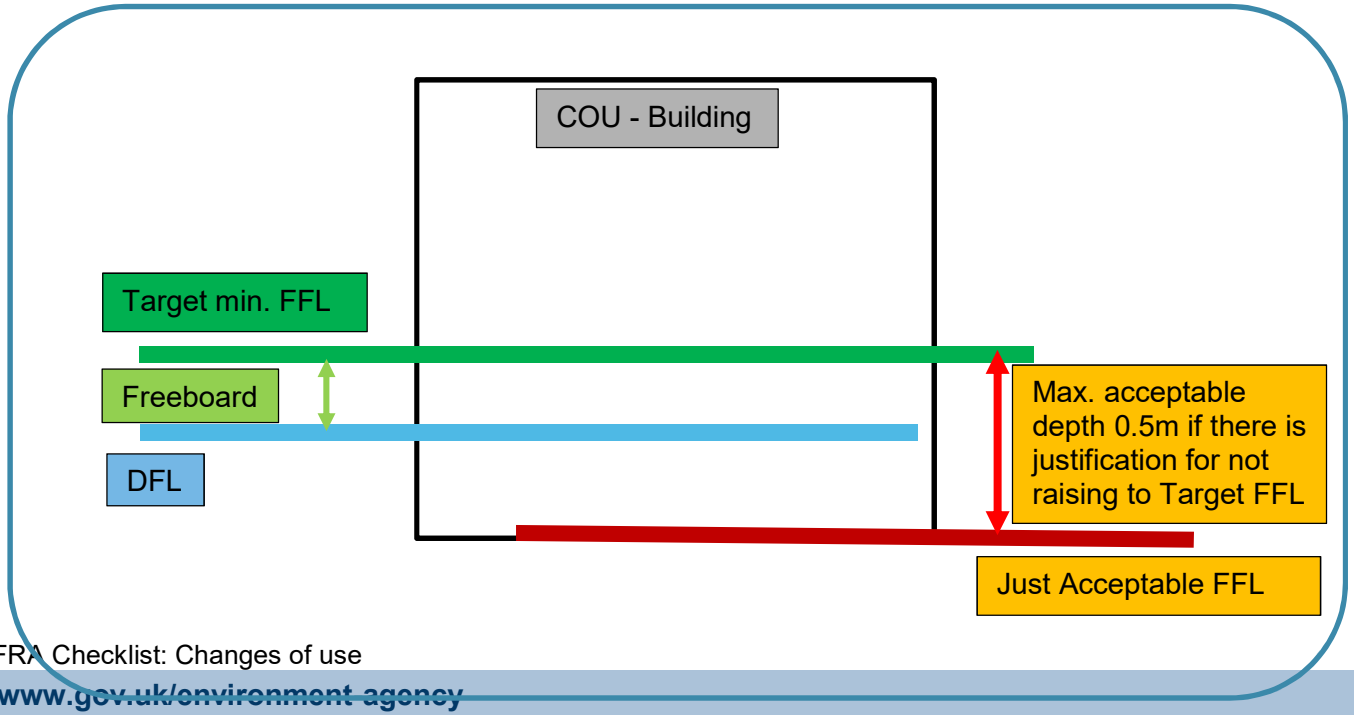
Decision-making

Responses to the above considerations will help indicate whether the proposal will be safe for occupants over the lifetime of the development without increasing flood risks elsewhere. If the FRA does not provide answers to these considerations it would be considered inadequate, and we would object to an application with an inadequate FRA. An inadequate FRA is sufficient reason to refuse planning permission.

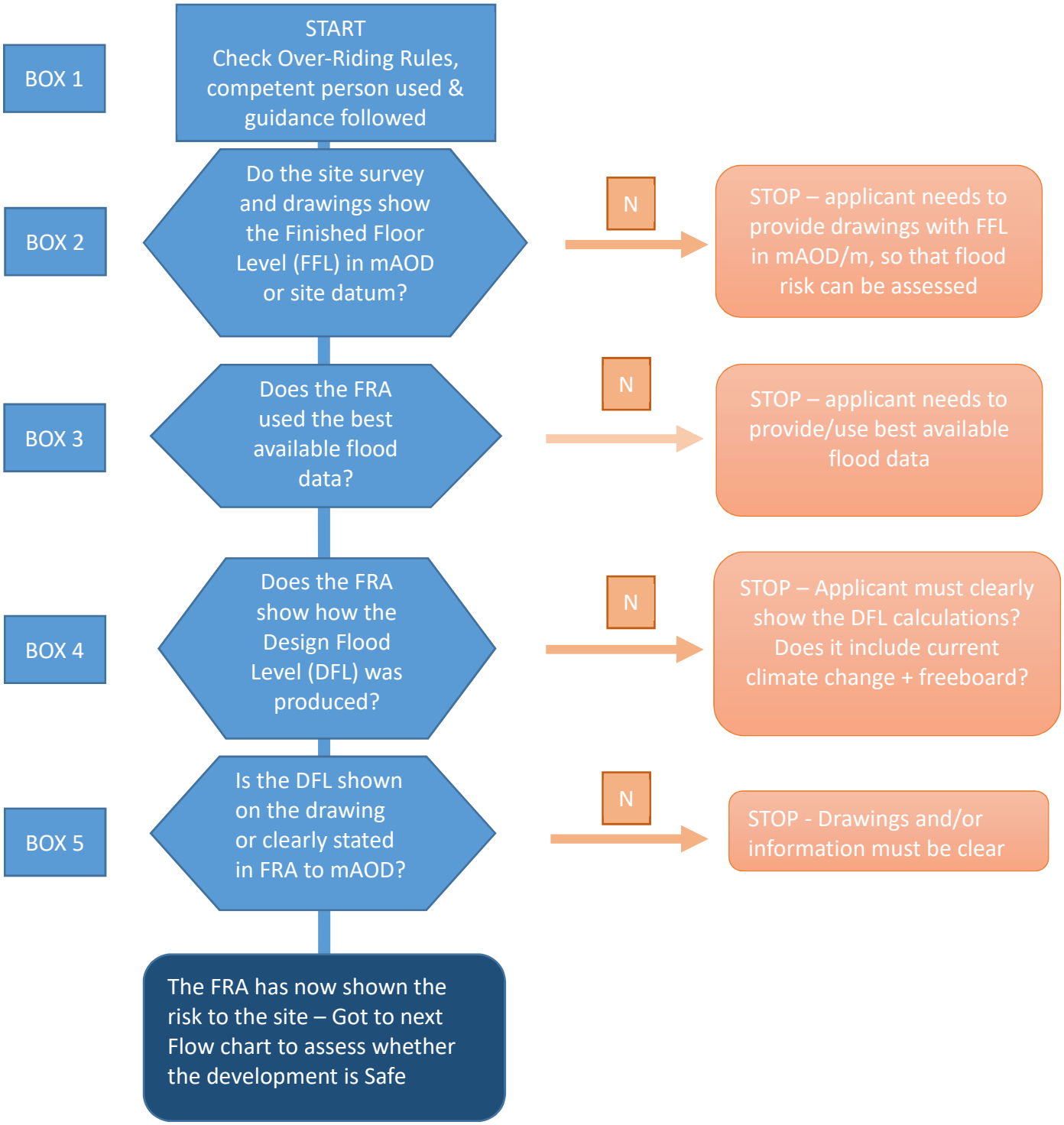
We would normally consider any significant internal property flooding (i.e. above 0.5m depth) to be unacceptable and would recommend refusal on this basis.

Prior to making a decision on applications like these planning officers will also need to consult with the council's emergency planners (i.e. matters of safe refuge and access/egress) and their building control teams (i.e. structural integrity during a flood event).

Diagram of Design Flood Level (DFL), Freeboard, Design min FFL, Just Acceptable FFL



Decision Flow Chart 1- Baseline Data



Decision Flowchart 2 – Is it safe?