

An
Bord
Pleanála

FSC Report

ABP 309703-21

**Appeal v Refusal or Appeal v
Condition(s)**

Appeal v Condition 2

Development Description

Construction of three residential blocks and alterations to existing basements – Blocks U, T and W, Charlestown Development, St. Margaret's Road, Finglas, Dublin 11

**An Bord Pleanála appeal ref
number:**

ABP-309703-21

**Building Control Authority Fire
Safety Certificate Register Ref No:**

19/4101/7D

Appellant & Agent:

Applicant : Tribal Developments
Agent : Jeremy Gardner Associates

Building Control Authority:

Fingal County Council

Date of Site Inspection

NA

Inspector/ Board Consultant:

Maurice Johnson

Appendices

NA

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2.0 Introduction

2.1 Subject Matter and Background to the Appeal

This report sets out my findings and recommendations on the appeal submitted by Jeremy Gardner Associates [hereafter referenced as JGA] on behalf of their Client, Tribal Developments, against Condition No. 2 attached to the Fire Safety Certificate (Reg Ref No. 19/4101/7D) granted by Fingal County Council [hereafter referenced as FCC] in respect of Construction of three residential blocks and alterations to existing basements – Blocks U, T and W, Charlestown Development, St. Margaret's Road, Finglas, Dublin 11

The subject matter of this FSC application is a proposal to construct three residential Blocks U, T and W atop existing two storey car park as part of Phase 2B of the Charlestown Development and as part of a larger development comprising Blocks U, R, S, T, V and W. The application includes various alterations to the existing basement car park, including in particular a proposal to remove several natural ventilation openings in the podium slab above the Phase 2 Level -1 car park. It is proposed by the Applicant to augment the residual lesser level of natural venting with mechanical smoke venting (i.e. combination of impulse fans and smoke extract fans).

Two separate FSC applications have also recently been made in respect of Block R and S and Block V. The application for Blocks R and S (Reg. Ref. 19/4016/7D) attracted a similar condition to that which is the subject matter of this appeal and is itself the subject of a separate appeal (ABP Ref No 309704-21). The more recent application for Block V (Reg. Ref. No. 20/4008/7D) did not contain a similar condition. FCC however state in their submission to ABP by cover of letter dated 14.04.2021 that FCC did not consider it necessary to include this condition on FSC 20/4008/7D because the basement under Block V was already dealt with in FSC 19/4101/7D and therefore they contend that the condition in FSC 19/4101/7D applies.

It is noted that the Charlestown Development was the subject of a number of previous FSC applications for Phase 1 and Phase 2. In those applications the design as approved for the smoke/heat ventilation of the car park levels was as follows:

- Level -1 (Combined Phase 1+2) - comprised natural ventilation throughout achieving an aggregate vent area of not less than 2.5% of the floor area of the car park and distributed between Phases 1 and 2 i.e. in compliance with section 3.5.2.4 of TGDB 2006. It is noted that JGA in their CFD Report P1/1376/9 Issue 2 state that the original Level -1 basement had in fact 2.7% of natural venting i.e. somewhat in excess of the minimum requirement of 2.5%.
- Level -2 (Phase 2 only) – is stated to comprise a mechanical smoke ventilation system providing 10 air changes per hour and designed in accordance with 3.5.2.5 of Technical Guidance Document B 2006 (refer 3.5.1.1.2 of JGA Compliance Report P1/1376/R3/Issue 03 in respect of FSC/094/09).

Accordingly the originally FSC approvals were based entirely on proposals which conform to the “*prima facie*” guidance in Technical Guidance Document B 2006.

In FSC 19/4101/7D JGA have proposed that the overall natural ventilation for the combined Phase 1+2 Level -1 car park be reduced to 2.1% by blocking off several of the existing natural vents (i.e. a 0.6% reduction on the venting approved in previous FSC applications) in the Phase 2 area and JGA propose instead to install 8 new smoke extract fans in Phase 2 and 2 new smoke extract fans in Phase

1 as described in Figure 2 of the JGA CFD report i.e. they propose a hybrid of natural and mechanical venting.

JGA also include Mechanical Ventilation drawing 18614-VCR-ZZ-B1-DR-M-200 Rev C03.01 in their appeal submission which indicates an array of impulse/jet fans in the Phase 2 car park to act in conjunction with the smoke extract fans.

JGA state on page 4 of their CFD report that the “mechanical extract system will operate on a “push-pull” basis i.e. upon detection of a fire, fans in the location nearest the fire will operate in exhaust mode, while all other fans will operate in supply mode”. They do not elaborate further on this point nor do they include any Cause and Effect to demonstrate how this “push-pull” system will operate in practice i.e. which detection areas will result in fans operating in either “push” or “pull” mode and how the impulse fans will react in fire conditions i.e. are the impulse fans also reversible and do they operate in a delayed mode in fire conditions and if so how is this controlled.

Furthermore it is noted that JGA indicate the presence of 2 x SEF 02 serving Level -1 in Figure 2 of their report which are not shown on the corresponding M&E drawing which they include with their appeal – refer copy extracts below.

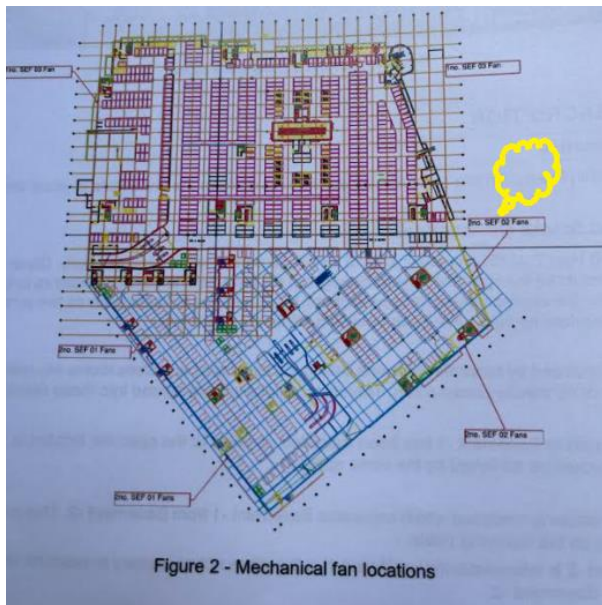
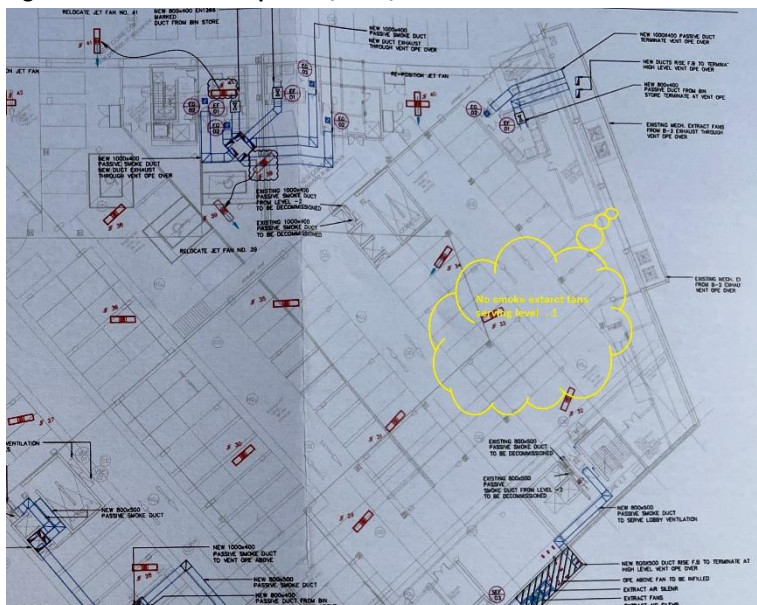


Figure 2 from JGA CFD Report P1/1376/9 Issue 2



Ex VMRA drawing 18614-VCR-ZZ-B1-DR-M-200 Rev C03.01

In relation to the Level -2 car park JGA state that the venting is unchanged from that approved in FSC/094/09 which is described in the JGA Compliance Report P1/1376/R3 Issue 3 as a mechanical ventilation system in accordance with section 3.5.2.5 of the TGDB (i.e. quoting from 3.5.1.1.2 of JGA Report P1/1376/R3 Issue 3 submitted in respect of FSC/094/09). This does not appear to be entirely correct however in that the M&E drawing 18614-VPASSIVE-ZZ-B2-DR-M-201 Rev C03.01 submitted by JGA with their appeal indicates an impulse fan system at Level -2 as opposed to a ducted system as described in 3.5.2.5 of TGDB.

Finally it is noted that the section of Basement -1 car park under the shopping centre – i.e. up to gridline A-0 and as indicated on MCORM drawing 18001 FSCA 3 enclosed with the JGA appeal – is sprinkler protected on foot of a previous FSC applications for the shopping centre – JGA reference FSC 05/4372 and FSC 07/4152 in this regard. There is no fire separation proposed or conditioned in previous FSC applications between the sprinklered part of the car park and the balance of the Level -1 car park and the Level -2 car park both of which are unsprinklered at present i.e. the 2 level car park is treated as a single fire compartment.

The loading bay at level -2 Phase 2 area is also identified to be fitted with sprinkler protection in previous FSC/094/09 lodged by JGA – refer B1.3.2 of the JGA Compliance Report P1/1376/R3 Issue 03 included as Appendix 5 of history information provided by FCC to ABP on 15.07.2020

The Fire Safety Certificate was granted on 15th February 2021 with 19 conditions attached.

Condition 2, which is the subject of the appeal, reads as follows:

A sprinkler system in accordance with I.S EN 12845:2015 'Fixed firefighting systems – Automatic sprinkler systems – Design Installation and maintenance' is to be provided throughout the areas of Basement Level -1 & Basement Level -2

With the stated reason for the condition being:

Reason: *To comply with B1 and B5 of the Second Schedule to the Building Regulations 1997 to 2020.*

De novo consideration is not warranted and the Board can rely on the provisions of Article 40(2) of the Building Control Regulations and deal with the appeal on the basis of Condition 2 only.

2.2 Documents Reviewed

- 2.2.1 Fire Safety Certificate Application and Supporting Documentation and Additional Information submitted by JGA on behalf of their Client
- 2.2.2 Further Information requests, decision and grant by FCC on 15th February 2021 with 19 conditions attached.
- 2.2.3 Appeal submission to An Bord Pleanala by JGA dated 11.03.2021 and 06.05.2021
- 2.2.4 Appeal submission to An Bord Pleanala by FCC by cover letter dated 14.04.2021

3.0 Consideration of Arguments by Appellant and BCA

Condition 2

A sprinkler system in accordance with I.S EN 12845:2015 'Fixed firefighting systems – Automatic sprinkler systems – Design Installation and maintenance' is to be provided throughout the areas of Basement Level -1 & Basement Level -2

With the stated reason for the condition being:

Reason: *To comply with B1 and B5 of the Second Schedule to the Building Regulations 1997 to 2020.*

Insofar as the reason stated in the Grant of Fire Certificate for the imposition of Condition 2 is generic in nature it is considered appropriate to set out, in the first instance, the reasoning of FCC as outlined in more specific detail in their appeal submission to ABP by cover letter dated 14.04.2021

Case made by FCC in respect of Condition 2

- i. FCC correctly note that TGDB 2006, in Sections 3.5.2.4 and 3.5.2.5, identify two alternative systems of ventilation to achieve prima facie compliance for car parks. These comprise either a natural venting system providing permanent openings totally not less than 2.5% of the plan area of the car park and arranged to provide a through draught OR a ducted mechanical system delivering 10 air changes per hour in the car park.

FCC note that sprinkler protection is not normally required subject to the venting being in compliance with one of these options and provided that the car park does not contain any other significant fire load e.g. attendants kiosk not to exceed 15sqm.

FCC note that the previous FSC approvals were based on natural ventilation conforming to Section 3.5.2.4 of TGDB throughout Level -1 and mechanical ventilation conforming to Section 3.5.2.5 of TGDB at Level -2.

FCC argue that the ventilation at Level -1 no longer complies with the above - i.e. is less than 2.5% - and has not been replaced with a 10ACH mechanical system complying with 3.5.2.5 and on that basis FCC argue that they are justified in conditioning the provision of sprinkler protection.

- ii. FCC also reference Section 5.4.3 of TGDB which prescribes that basements which do not have 2.5% natural ventilation can, as an alternative, be provided with a mechanical ventilation system complying with the aforementioned section 3.5.2.5 in addition to sprinkler protection.

FCC appear to be implying that sprinkler protection is therefore required in a mechanically ventilated underground car park.

I do not concur with this interpretation as section 5.4.3 also clearly states that “*basement car parks are not normally expected to be fitted with sprinklers*” and thus treats mechanically ventilated basement car parks differently than other mechanically ventilated basement uses. This is also consistent with the previous FSC granted by FCC for the Level -2 basement in which

mechanical ventilation per 3.5.2.5 of TGDB was accepted and no condition requiring sprinklers was imposed.

- iii. FCC comment at some length with regard to the 8MW Design Fire Size utilised in the JGA Comparative Fire/smoke Model.

This Design Fire has been extracted from Table 1 of BS 7346-7:2013 *Components for smoke and heat control systems – Part 7: Code of practice on functional recommendations and calculation methods for smoke and heat control systems for covered car parks* – copy extract below.

Table 1 Steady-state design fires

Fire parameters	Indoor car park without sprinkler system	Indoor car park with sprinkler system	2 car stacker with sprinklers
Dimensions	5 m x 5 m	2 m x 5 m	2 m x 5 m
Perimeter	20 m	14 m	14 m
Heat release rate	8 MW	4 MW	6 MW

FCC argue that this Design Fire is not appropriate in evaluating deviations from the prescriptive “*smoke clearance*” provisions in 3.5.2.4 and 3.5.2.5 of TGDB as it only considers smaller car fires typically involving a single car or the early stages of multi-car fires and does not consider a fire which has spread beyond a single vehicle.

It is noted that there is some merit in this argument as the Commentary on Clause 5 Design Fires in BS 7346-7 clearly indicates that the Design Fires are primarily intended for the design of systems intended to assist fire-fighting intervention or to protect means of escape – i.e. early stages of fire growth - and are not intended to be used for the design of smoke clearance systems – refer copy extract below.

5 Design fires

COMMENTARY ON Clause 5

Reliable design fire information is essential for the design of systems intended to assist fire-fighter intervention or to protect means of escape. A design fire is not used for the design of systems intended for smoke clearance only, as these systems can follow separate prescriptive rules.

Consequently it is reasonable to conclude that the use of these Design Fires to compare a smoke clearance system which complies with the prescriptive rules in TGDB with a system which does not comply with these rules is not appropriate/valid.

FCC argue that any comparative analysis ought to have considered larger fires growing beyond a single car size.

FCC include extensive reference to studies undertaken by BRE and reported upon in BRE Report BD2252 *Fire spread in car parks (2010)*. This report includes experimental results which indicate fire sizes potentially growing beyond 8MW where more than one car is simultaneously involved. FCC therefore argue that sprinkler protection is necessary to support a Smoke Clearance Design based on a Steady State Fire as is proposed by JGA.

- iv. FCC also make reference to recent fires in Douglas Shopping Centre Cork and Kings Dock Liverpool in which multiple cars were alight and assert that these fires support their argument that an 8MW Design Fire is not appropriate in this instance.

- v. FCC also note that in addition to their reservations with regard to the fire as outlined above, the results of JGA’s CFD analysis also indicates that the proposed design delivers slightly less favourable results than the TGDB compliant design.
- vi. FCC make reference to BS9999 2017 which in clause 27.3 states:

27.3 Venting of smoke and heat from covered car parks

A system of smoke and heat ventilation, designed in accordance with BS 7346-7, with the objective of clearance of smoke during the fire and after the fire has been suppressed, should be provided from every car park storey.

NOTE BS 7346-7:2013 provides guidance on three methods of smoke clearance by horizontal cross-flow through the car park storey: natural cross-ventilation specified as permanent openings (Clause 7), mechanical cross-ventilation achieved using conventional mechanical ventilation (Clause 8) and mechanical cross-ventilation using jet fans (Clause 9).

FCC contend that this clause is not being complied with in the proposed design

- vii. FCC make reference to BS9991: 2015 which in clause 14.2.1.4 states:

14.2.1.4 Venting of smoke and heat from covered car parks

A smoke and heat ventilation system should be provided from every car park storey, designed in accordance with BS 7346-7 and having the objective of clearing smoke during a fire and/or after a fire has been suppressed.

NOTE Further information and guidance regarding car parks (open-sided and non-open-sided car parks, mechanical and natural ventilation) is given in the Building Regulations 2010, Approved Document B [14].

FCC contend that this clause is not being complied with in the proposed design

- viii. FCC also reference BS5588 Part 10 which in Clause 10.3.2(a)(5) prescribes that car parks in shopping complexes should be sprinkler protected. It appears however that this issue, which relates to fire safety for the shopping complex, is already dealt with in previous FSC applications FSC 05/4372 and FSC 07/4152 whereby sprinkler protection was accepted by FCC as being required only under the footprint of the shopping centre and not in the Phase 2 part of the car park.
- ix. Finally FCC are concerned that a fire occurrence at level -2 is not considered in the Comparative Analysis

Case made by JGA in respect of Condition 2

For their part, JGA make the following key arguments:

- i. JGA contend that the comparative CFD model which they have undertaken demonstrates that the hybrid natural/mechanical venting which they propose at level -1 is as effective as the previously approved TGDB-Compliant design for which earlier FSC applications had been granted. Specifically they have compared the conditions in Level -1 for the previously approved design, which had a total aggregate area of natural venting of 2.7% at Level -1, with the proposed design in which the total area of venting is reduced to 2.1% and augmented with mechanical extract comprising smoke extract/inlet fans in Phase 1+2 and impulse fans in the Phase 2 part of the car park. In this analysis they employ a Steady State 8MW State Design Fire and have considered 2 fire locations, both in the Phase 2 part of the car park.

In their CFD report P1/1376/R9/Issue 02 JGA conclude that:

“although CO concentrations and temperature is found to be slightly higher in the proposed model, comparable ventilation conditions are displayed in both models as the following performance criteria are met:

- (a) Firefighting access points are not jeopardized to a greater degree in the proposed model: and*
- (b) Fire fighters will be able to set up a bridgehead as a base from which to attack the fire in the proposed model: and*
- (c) Smoke-free access is provided to a point close to the seat of the fire.”*

On the basis of the foregoing JGA contend that there is no justification for the imposition of sprinkler protection at level -1 as the fire design otherwise is, they say, in substantial compliance with TGDB (i.e. vis escape provisions, compartmentation, linings, fire-fighting facilities) and thus sprinkler protection is not being sought as a trade-off against other deviations. It is noted that FCC do not raise any such issues of non-compliance in their submission to ABP and accordingly the reason for imposition of Condition 2 is stated by FCC in their appeal submission to ABP to be primarily concerned with Requirements B3 and B5 and the non-compliance with prima facie guidance for venting in TGDB.

- II. FCC also contend that in a Comparative Analysis the choice of Design Fire is not relevant as any inaccuracies resulting from same are applied equally to both scenarios. Whilst this may be the case in some Comparative Analyses it is not the case in my view when comparing a naturally ventilated car park to a car park with a bespoke hybrid of natural and mechanical venting. In this regard it is noted that the natural venting solution is more accommodating of larger fires since the effectiveness of the venting is directly related to the temperature of the fire gases whereas in the mechanical design the venting does not “adjust” to the fire conditions. Accordingly an underestimation of the Design Fire may well unfairly favour the hybrid solution.
- III. JGA state that mechanical venting previously approved for level -2 (i.e. based on compliance with 3.5.2.5 of TGDB) is not being altered and that fire gases emanating from a fire at level -2 and issuing to level -1 will not impact on the effectiveness of the Level -1 venting and thus they contend that there is no justification for the imposition of sprinkler protection at Level -2 either.
- IV. JGA contend that sprinkler protection is not otherwise a requirement of TGDB, BS9991 or BS9999 for car parks
- V. JGA reference several car parks in which they have secured approvals without sprinkler protection. However JGA go onto note that all of these car parks were fitted with mechanical ventilation and not do not offer any examples of designs involving a hybrid of natural and mechanical ventilation as is proposed for Charlestown Level -1.
- VI. JGA also reference ABP file 34.FS.0363 in which a condition to sprinkler protect an underground car park at Athlone Town Centre was overturned on appeal. It is noted however that the car park in question was provided with an enhanced mechanical ventilation system (i.e. conforming to Clause 10 of BS 7346 Part 7) and therefore has limited relevance to the Charlestown car park.

4.0 Assessment

Having reviewed the arguments advanced by FCC and JGA it is clear that the key issue arising in this appeal is whether the venting being proposed in the current FSC at Level -1 (i.e. 2.1% natural venting augmented by mechanical extract fans in Phase 1+2 and impulse fans in Phase 2, compared to min. 2.5% natural ventilation as approved in previous FSC applications) satisfies the requirements of Part B3 and B5 of the Building Regulations without recourse to sprinkler protection.

A further consideration which has not been specifically alluded to by FCC is the fact that the previous FSC approval for ventilation of the car park at level -2 (Reg Ref 07/4315 and FSC/094/09) was in respect of a mechanical system complying with 3.5.2.5 of TGDB (refer 3.5.1.1.2 of JGA Compliance Report P1/1376/R3/Issue 03) which it is noted is based on a ducted system, whereas the actual venting now being proposed at level -2 is one comprising impulse fans as opposed to ductwork – refer VMRA drawing 18614-VPASSIVE-ZZ-B2-DR-M-201 Rev C03.C01 enclosed with JGA appeal documents.

It is noted that TGDB includes two options for “*prima facie*” guidance for basement car park ventilation as follows:

- a natural venting system per section 3.5.2.4 comprising permanent vents at ceiling level (in this case in the podium slab) totalling not less than 2.5% of the floor area and located so as to provide a through draught, OR
- a mechanical ducted system providing min 10ACH and otherwise conforming with 3.5.2.5(a) to (e) of TGDB

Though not explicitly stated in TGDB a mechanical system providing 10ACH and utilising impulse fans rather than ductwork is also generally accepted where the system is designed in accordance with Clause 9 of BS 7346-7:2013 *Components for smoke and heat control systems – Part 7: Code of practice on functional recommendations and calculation methods for smoke and heat control systems for covered car parks.*

It is noted that the ventilation set out in 3.5.2 of TGDB is a “*smoke clearance*” type system with the twofold objective of (a) assisting fire fighters by providing ventilation to allow speedier clearance of the smoke once the fire has been extinguished and (b) to help reduce the smoke density and temperature during the course of a fire.

TGDB goes on to note in 3.5.2 that, subject to compliance with the *prima facie* guidance, car parks are not normally expected to be fitted with sprinklers

In this application it is clear that there is now a significant deviation from the *prima facie* guidance arising at level -1 as the natural venting being proposed is being reduced to 2.1% (i.e. 16% less than the min 2.5%) with all of the reduction being in the Phase 2 area, in favour instead of the introduction of a system of mechanical extract/inlet fans in Phase 1+2 and an array of impulse fans in Phase 2. The system is described as a “*push-pull*” system by JGA in their CFD report i.e. in which extract fans act as inlet or outlet depending on the fire location and presumably also the impulse fans are intended to operate in a reversible mode. JGA offer little detail on how this system is programmed or controlled nor do JGA give any indication of the air change rates which will be achieved in the Phase 2 part of the car park.

It is noted that TGDB, in Section 0.2, identifies that alternative solutions to those set out in the prima facie guidance can be employed using fire safety engineering to demonstrate the adequacy of the alternative solution. TGDB goes on to identify that the fire engineering approach can be based on “a comparison of the performance of a proposed alternative solution with that achieved using the guidance in this Technical Guidance Document” i.e. a Comparative Analysis.

Accordingly the concept of a comparative analysis is embodied in TGDB as an acceptable design approach.

However there are several aspects of the Comparative Analysis undertaken by JGA which I consider fall short of showing equivalence with the prima facie guidance as follows:

- a. I concur with FCC that the use of an 8MW Steady State Design Fire, as has been employed by JGA in the Comparative CFD analysis, is not appropriate for evaluation of a Smoke Clearance system which is the objective of the prima facie guidance. The 8MW Design Fire is appropriate for designing a smoke venting system which has other objectives (e.g. to protect means of escape or to assist fire-fighter intervention where the car park design deviates with other aspects of the guidance for instance) and not for the assessment of a Smoke Clearance system. Accordingly I concur with FCC that larger potential fires should have been considered in the Comparative analysis in this instance.
- b. The CFD analysis considers only 2 car fire locations whereas the proposed amendment to the venting system is affecting the entire of level -1. Fire occurrences in other locations should therefore have been considered including in Level -2 and in the Phase 1 part of Level -1
- c. The CFD analysis presents very little information on the zoning/control of the reversible fans being proposed i.e. how the “push-pull” system is programmed and controlled.
- d. There is an anomaly between the Smoke Extract Fans (i.e. 2 x SEF 02) shown in the CFD report and on the VMRA drawings as noted in 2.1 above – which suggest that more fans may have been used in the CFD analysis than is provided for in the VMRA services drawings
- e. An impulse fan assisted mechanical ventilation system relies upon creating air movement across the car park between the inlet locations and the extract locations. This in turn is potentially affected by wind blowing through the natural vent openings in the subject design. Accordingly in seeking to demonstrate equivalence the effect of wind should have been considered in the Comparative Models.
- f. It is normal practice when using impulse fans to delay the operation of the impulse fans during the evacuation period as their operation may actually worsen conditions for escapees. There is no reference to such a time delay in the proposals submitted or in the supporting CFD analysis.
- g. In addition to the foregoing, JGA acknowledge in their CFD report that the fire/smoke conditions with the proposed design are inferior to those in the code-compliant prima facie design.

Accordingly I conclude that JGA have not demonstrated that the venting system being proposed achieves equivalence to the prescriptive “prima facie” provisions in 3.5.2 of TGDB.

Furthermore it appears that the ventilation being proposed at level -2 is in fact an impulse fan assisted system and not a ducted system as referenced in 3.5.2.5 of TGDB and on foot of which the previous FSC approvals were granted e.g. FSC/094/09

5.0 Conclusions/Recommendation

On the basis of the foregoing I agree that FCC were justified in imposing a requirement for sprinkler protection of the car park. However I consider that the Applicant could also have been given the option of altering the venting system to conform with the prima facie guidance in TGDB or the impulse fan equivalent in Section 9 of BS 7346-Part 7 :2013.

The condition should in my view also capture the apparent use of impulse ventilation at Level - 2.

6.0 Reasons and Considerations

On the basis of the assessment in 4.0 above I conclude that JGA have not adequately demonstrated in their Comparative Analysis that the alternative hybrid system being proposed achieves a level of performance equivalent to the prima facie guidance in the Technical Guidance Document B

Accordingly in relation to Condition 2, I conclude that the appeal should be refused but that the Condition be modified to offer the applicant the option of modifying the design of the ventilation system to align with the prima facie guidance and to address the ventilation design for Level -2 as follows:

Condition 2

Either

- (1) *A sprinkler system in accordance with I.S EN 12845:2015 'Fixed firefighting systems – Automatic sprinkler systems – Design Installation and maintenance' is to be provided throughout the car park areas of Basement Level -1 & Basement Level -2, OR*
- (2) *The ventilation system for the car park at Levels -1 and -2 shall comply with paragraphs 3.5.2.4 or 3.5.2.5 of Technical Guidance Document B 2006 or Clause 9 of BS 7346-Part 7 2013 Components for smoke and heat control systems – Part 7: Code of practice on functional recommendations and calculation methods for smoke and heat control systems for covered car parks. Details of the ventilation system showing conformance with the foregoing shall be submitted to and approved by the Building Control Authority prior to occupation.*

With the stated reason for the condition being:

Reason: *To comply with B3 and B5 of the Second Schedule to the Building Regulations 1997 as amended.*

7.0 Conditions

Modify Condition 2 read as follows

Condition 2

Either

- (3) *A sprinkler system in accordance with I.S EN 12845:2015 'Fixed firefighting systems – Automatic sprinkler systems – Design Installation and maintenance' is to be provided throughout the car park areas of Basement Level -1 & Basement Level -2, OR*
- (4) *The ventilation system for the car park at Levels -1 and -2 shall comply with paragraphs 3.5.2.4 or 3.5.2.5 of Technical Guidance Document B 2006 or Clause 9 of BS 7346-Part 7 2013 Components for smoke and heat control systems – Part 7: Code of practice on functional recommendations and calculation methods for smoke and heat control systems for covered car parks. Details of the ventilation system showing conformance with the foregoing shall be submitted and approved by the Building Control Authority prior to occupation.*

With the stated reason for the condition being:

Reason: *To comply with B3 and B5 of the Second Schedule to the Building Regulations 1997 as amended.*

MAURICE JOHNSON

Chartered Engineer | BE, CEng, FIEI, MStructE, MSFPE
Consultant/Inspector

Date : _____