臺北市政府　函

受文者：

發文日期：中華民國108年6月10日
發文字號：府都設字第1083050529號
速別：普通件
密等及解密條件或保密期限：
附件：一、會議紀錄請逕至本府都市發展局網站下載（網址：https://www.gis.udd.taipei.gov.tw/Meet4.aspx）。二、如說明三。

主旨：檢送本府108年5月30日召開「臺北市都市設計及土地使用開發許可審議委員會」第527次委員會會議紀錄1份，請查照。

說明：

一、依本府都市發展局108年5月27日北市都設字第1083048008號開會通知單賡續辦理。

二、倘對本次發送會議紀錄內容，認有誤寫、誤繕或類此之顯然錯誤，請依行政程序法第168條等相關規定，於文到10日內提出書面意見，送本府彙辦。

三、旨揭會議原訂之「防災避難電腦模擬」議題尚未討論，考量「參數設定」為防災避難電腦模擬之關鍵，為利後續審議能聚焦並順利進行，另檢送遠雄公司目前進行電腦模擬之「防災避難模擬參數設定表」及軟體指引說明各1份，惠請委員及幹事協助檢視，並於文到5日內以電子郵件、傳真或電子訊息等方式提供相關意見，據以辦理後續。

正本：臺北市政府都市發展局 黃主任委員景茂、臺北市政府都市發展局 王副主任委員玉芬、臺北市政府都市發展局 羅副主任委員世譽、王委員俊雄、許委員晉誌、王委員价巨、邱委員英浩、劉委員惠雯、吳委員杰穎、江委員世雄、廖委員慧燕、董委員娟鳴、蔡委員元良、林委員秀芬、鍾委員慧諭、張委員章得、劉委員明滄、臺北市政府工務局 楊委員明祥、臺北市政府消防局 許委員景盛、臺北市政府交通局 陳委員榮明、臺北市政府工務局大地工程處 吳委員明聖、臺北市政府環境保護

局 盧委員世昌、臺北市建築管理工程處 章委員毅、臺北市政府都市發展局 劉執行秘書美秀、臺北市政府都市發展局 吳執行秘書金龍、臺北市建築管理工程處 梁幹事志遠、臺北市政府工務局公園路燈工程管理處 莫幹事華榕、臺北市政府工務局大地工程處 梁幹事成兆、臺北市政府交通局 葉幹事志宏、臺北市政府環境保護局 黃幹事莉琳、臺北市政府消防局 吳幹事尚欣、臺北市政府文化局 楊幹事雅芳、臺北市政府工務局新建工程處 陳幹事炳麟、臺北市政府都市發展局 羅幹事文明、臺北市政府都市發展局 葉幹事家源、臺北市政府都市發展局 林幹事芝羽、臺北市都市更新處 袁幹事如瑩、臺北市建築師公會、臺北市政府政風處、臺北市政府法務局、臺北市政府捷運工程局、臺北市政府體育局、臺北市政府交通局、臺北市政府工務局新建工程處、臺北市政府文化局、瀚亞建築師事務所、遠雄巨蛋事業股份有限公司、臺北市議會 邱議員威傑、臺北市議會 苗議員博雅、臺北市議會 林議員亮君、臺北市議會 簡議員舒培、張教授勝雄、臺北市大安區華聲里辦公處、臺北市信義區新仁里辦公處、臺北市大安區車層里辦公處、臺北市大安區正聲里辦公處、臺北市松菸生態聯盟、臺北市信義區西村里辦公處、臺北市信義區正和里辦公處、臺北市信義區興隆里辦公處、臺北市信義區中興里辦公處、臺北市信義區興雅里辦公處、臺北市信義區敦厚里辦公處、臺北市信義區廣居里辦公處、臺北市信義區安康里辦公處、臺北市松山區吉祥里辦公處、臺北市松山區新聚里辦公處、臺北市松山區復盛里辦公處、臺北市松山區復源里辦公處、臺北市松山區復建里辦公處、臺北市信義區光復國民小學學生家長委員會、松菸公園催生聯盟、社團法人中華民國荒野保護協會、綠黨、台灣蠻野心足生態協會、社團法人臺灣環境行動網、大巨蛋協力廠商自救會、國立國父紀念館、台灣護樹團體聯盟、松菸護樹志工（請新仁里辦公處轉知）、張岳梅君、王委員小玉、財團法人台灣建築中心、中華民國棒球協會、台北興富發棒球隊、中華職業棒球大聯盟

副本：

臺北市都市設計及土地使用開發許可審議委員會 第527次委員會

時間：108 年 5 月 30 日（星期四)9 時 0 分

地點：N206

主席：黃 主任委員 景茂

紀錄：個案承辦人

單　　　　位	職　　　稱	姓　　　名	簽　　　名
臺北市政府都市發展局局長室	局長	黃景茂	黃景茂
臺北市政府都市發展局副局長室	副局長	王玉芬	
臺北市政府都市發展局副局長室	副局長	羅世譽	羅世譽
臺北市政府工務局副局長室	副局長	楊明祥	
臺北市政府消防局副局長室	副局長	許景盛	黃建華 代
臺北市政府交通局副局長室	副局長	陳榮明	陳榮明
臺北市政府工務局大地工程處副處	副處長	吳明聖	

長室			
臺北市政府環境保護局副局長室	副局長	盧世昌	盧世昌
銘傳大學	委員	王价巨	
實踐大學	委員	王俊雄	
臺北市立大學	委員	邱英浩	
新北市都市計畫委員會	委員	劉惠雯	
臺北市立大學	委員	吳杰穎	吳杰穎
銘傳大學	委員	董娟鳴	
林秀芬建築師事務所	委員	林秀芬	
境向聯合建築師事務所	委員	蔡元良	
禾拓規劃設計顧問有限公司	委員	許晉誌	許晉誌
逢甲大學	委員	鍾慧諭	鍾慧諭
江世雄結構技師事務所	委員	江世雄	江世雄
廖慧燕建築師事務所	委員	廖慧燕	
臺北市不動產開發商業同業公會	委員	張章得	
劉明滄建築師事務所	委員	劉明滄	

臺北市政府都市發展局主任秘書室	主任秘書	劉美秀	
臺北市政府都市發展局專門委員室	專門委員	吳金龍	
臺北市建築管理工程處總工程司室	副總工程司	梁志遠	
臺北市政府工務局公園路燈工程管理處總工程司室	副總工程司	莫華榕	
臺北市政府工務局大地工程處專門委員室	專門委員	梁成兆	
臺北市政府交通局綜合規劃科	技正	葉志宏	
臺北市政府環境保護局綜合企劃科	科長	黃莉琳	黃莉琳
臺北市政府消防局災害搶救科	技正	吳尚欣	黃建華 代
臺北市政府工務局新建工程處總工程司室	專門委員	陳炳麟	
臺北市政府都市發展局	副總工程司	葉家源	

總工程司室			
臺北市政府都市發展局總工程司室	副總工程司	羅文明	羅文明
臺北市政府都市發展局都市設計科	科長	林芝羽	林芝羽
臺北市都市更新處總工程司室	副總工程司	袁如瑩	
臺北市政府文化局文化資產科	視察	楊雅芳	楊雅芳
臺北市建築管理工程處副處長室	副處長	章毅	章毅

列　席：

臺北市建築師公會	（簽名）
臺北市不動產開發商業同業公會	（簽名）
臺北市政府政風處	（簽名）
臺北市政府法務局	（簽名）
臺北市市政大樓公共事務管理中心	
瀚亞建築師事務所	（簽名）
遠雄巨蛋事業股份有限公司	（簽名）（簽名）
臺北市政府捷運工程局	（簽名）
臺北市政府體育局	（簽名）
臺北市政府交通局	（簽名）

臺北市政府工務局新建工程處	（簽名）（簽名）
臺北市政府文化局	（簽名）
張教授勝雄	
臺北市大安區華聲里辦公處	
臺北市信義區新仁里辦公處	陳幼瓊（簽名）
臺北市大安區車層里辦公處	
臺北市大安區正聲里辦公處	
臺北市松菸生態聯盟	（簽名）
臺北市信義區西村里辦公處	
臺北市信義區正和里辦公處	
臺北市信義區興隆里辦公處	

臺北市信義區中興里辦公處	
臺北市信義區興雅里辦公處	
臺北市信義區敦厚里辦公處	
臺北市信義區廣居里辦公處	
臺北市信義區安康里辦公處	
臺北市松山區吉祥里辦公處	
臺北市松山區新聚里辦公處	
臺北市松山區復盛里辦公處	
臺北市松山區復源里辦公處	
臺北市松山區復建里辦公處	
臺北市信義區光復國民小學學生家長委員會	
松菸公園催生聯盟	曹瑞先

社團法人中華民國荒野保護協會		
綠黨		
台灣蠻野心足生態協會	蔣子信瀅	
社團法人臺灣環境行動網	施國正	三場均持 沒有收到
大巨蛋協力廠商自救會		
國立國父紀念館	徐金鑫	
台灣護樹團體聯盟		
松菸護樹志工		
張岳梅君		
財團法人台灣建築中心		
王委員小玉	王小玉	

臺北市議員

市議員苗博雅　呂政孝代

市議員林亮君　李建鈞代

主秘及　簡舒培.

50市感恩

四、審議案

「臺北文化體育園區大型室內體育館開發計畫案（信義區逸仙段二小段 350 地號等土地）」都市設計及土地使用開發許可審議第 4 次變更設計案

都發局報告：略

討論：略

決議：

1 有關 57 輛大客車臨停方案，仍依前次委員會決議，以設於松菸北側方案為前提。惟請依委員及交通局意見，後續舉辦 2 萬人以上活動每次均須提送交維計畫送交通局審查，尖峰時間人力配置必須納入。

2 請體育局協助檢視營運管理計畫中有關交通管理智慧化議題，包含大客車預約、停車管理、人力配置等。

3 有關人員等候大客車之集結區請以數據量化分析，包括停等面積、人數及時間等，也請遠雄公司考量天候因素，評估以有遮簷半戶外之空間形式設置前開停等集結區，提供委員會審議參考：

4 另連接至松菸北側大客車臨停區之 2.5 公尺動線，請檢附設計圖現況照片，說明現場實際狀況。

5 有關交通議題請依上開意見修正，另有關消防救災、防災避難電腦模擬等議題，因時間因素延至下次會議討論。

6 請遠雄公司依上開決議修正後，再提都審委員會審議。

五、散會。

審議案:「臺北文化體育園區大型室內體育館開發計畫案（
信義區逸仙段二小段350地號等土地）」都市設計
及土地使用開發許可審議第4次變更設計案

一、案由說明:

（一） 本案前經本府100年6月28日府都設字第
10034741000號函核定在案，後續曾辦理3次變更設
計，條列如下:

1. 101年3月5日核定第1次變更設計。

2. 102年4月17日核定第2次變更設計。就「開放空間
景觀變更及整體結構柱位調整，未涉及平面隔間調整
部分」（不含立面變更）

3. 104年1月22日核定第3次變更設計（立面變更）。

（二）後續本案於106年6月8日完成防火避難性能審查評定
程序，因其變更內容已涉主要樓梯數量及位置調整，故
提送都審第4次變更設計程序，案經106年10月17日
、107年1月17日、107年7月24日幹事會審查，再
提107年9月20日、107年11月1日、108年1月3
日、108年3月28日都審委員會審議，決議略以:「請
遠雄公司依上開決議修正後，再提都審委員會審議。」
。

（三）有關本次變更設計內容如下:

1. 建築計畫資料表部分:（P9）

項目＼面積	104年1月22日都審第3次變更設計核定	本次變更
實設建蔽率	文化體育園區全區：45.21%	文化體育園區全區：45.21% 文化園區分區：33.13%
實設容積率	文化體育園區全區：211.16%	文化體育園區全區：211.09%

		文化園區分區：113.82%
容積樓地板面積	文化體育園區全區：381,124.60 ㎡	文化體育園區全區：381,017.03 ㎡ 文化園區分區：88675.61 ㎡
地下開挖規模	文化體育園區全區：61.09%	文化體育園區全區：61.03% 文化園區分區：37.41%
其他：文化、體育園區（容積樓地板面積）	文化體育園區全區：381,124.60 ㎡	文化體育園區全區：381,017.03 ㎡ 文化園區分區：88,675.61 ㎡
實設綠覆面積	24,678.31 ㎡	24,698.37 ㎡
實設綠覆率	60.14%	60.19%
自設汽車停車位	330 輛	258 輛
實設汽車停車位	2,226 輛	2,154 輛

2. 規劃設計部分：(P15~P23)

　　本案前經 107 年 9 月 20 日(506 次)、107 年 11 月 1 日(510 次)、108 年 1 月 3 日(514 次)及 108 年 3 月 28 日(521 次)等 4 次都審委員會審議，都審議題已聚焦於都市防災之防災避難人數計算、消防救災動線及 57 輛大客車於地面層上下客等三大議題。

二、複審意見如下：

　　有關 108 年 3 月 28 日第 521 次委員會決議及本局複審意見如下，提請委員會討論：

(一) 本案防災避難人數以 59833+X 為基礎進行，防災避難電腦模擬參數仍依前次 514 次委員會決議一辦理，惟原決議一之（4）及（5）予以整併，修正為「請設定各種災害情境條件，如地震、火災、恐攻…等，以確認不同類

型災害發生時，疏散出入口數量及位置。除前項條件外，前次委員會同意的3個疏散點之模擬結果併提委員會討論。並請考量擁擠條件下之人員疏散步行速度0.6m/s之模擬情境，請遠雄團隊之防災顧問評估檢討後，作為下次委員會審議之參考。」。

本次遠雄公司提出 59833 人(室內)+X(戶外 13733 人)=73566 人作為電腦模擬人數。另有關防災避難電腦模擬參數說明如下：

委員會決議	遠雄公司回覆	本局複審意見
1. 逃生避難模擬之人員步行速度請以本府所提安檢標準 1.2m/s 進行模擬。 2. 疏散空間密度請以本府安檢標準 3 人/㎡ 進行檢視，戶外疏散空間之面積計算應扣除有高低差區域，包含植栽、樓梯踏步等。 3. 時間參數比照台建中心性能審查之時間計算標準。 4. 請設定各種災害情境條件，如地震、火災、恐攻…等，以確認不同類型災害發生時，疏散出入口數量及位置。除前項條件外，亦可將前次委員會同意的 3 個疏散點之模擬結果併提委員會討論。並請考量擁擠條件下之人員疏散步行速度 0.6m/s 之模擬情境，請遠雄團隊之防	1. 電腦模擬之人員避難步行速度以 0.8m/sec~1.2m/sec 進行模擬。(P29、P166~P175) 2. 容留密度以 3 人/㎡ 檢討。計算方式為滯留於建築物外地面層之瞬間最大人數除以地面層廣場面積(扣除車道與雲梯車操作空間、挑空…等無法供人站立之空間)之比值。(P167、P168、P172) 3. 時間參數以 Route C 進行電腦避難模擬，模擬結果，體育館內避難人員可於 8 分鐘離開觀眾席及 15 分鐘離開場館。(P169) 4. 本案建築物遇災害需進行疏散時，所有樓梯及進出口大門皆做為緊急避難出口以因應各種災害情境。建築物外之基地避難以委員會同意之 3 個疏散地點進行模擬。(P167)	1. 請補充「步行速度 0.6m/s」之模擬結果，併「0.8m/s~1.2m/s」之模擬結果提委員會討論。 2. 本次變更設計對模擬結果的影響應納入評估： (1)西南角生活廣場設置公共藝術品。 (2)旅館大廳東側水幕牆(高 4M*長 20M)。 (3)旅辦棟平面變更。 3. 設置大型公共藝術品於轉角廣場對於逃生避難似無助益；水幕牆之位置及高度對於車道轉角視角安全有疑慮，建議取消上開之設施。 4. 有關遠雄公司提出 70000+X 之方案非屬都審權責，僅供委員會參考。

災顧問評估檢討後，作為下次委員會審議之參考。		

（二）消防救災動線議題之修正結果予以確認。惟請遠雄團隊考量，當人員避難疏散至戶外時，如何讓消防車順利進與出，相關動線請納入後續營運計畫評估。

遠雄公司回覆	本局複審意見
本公司於100年9月經市府同意的營運計畫內之逃生避難事項已有交代，本公司將俟大巨蛋興建完成後，視實際營運需求檢討是否有修訂營運計畫之必要性。	前次委員會業經消防局檢視確認。有關遠雄公司回應「逃生避難事項之營運計畫為原投資執行報告書一環，後續將視實際營運需求檢討是否有修訂之必要性」一節，請體育局確認。

（三）57 部大客車臨停車位規劃，原則尊重交通局與體育局所確認臨停車位在松菸文創北側之規劃方案，及大客車出場動線不影響市民大道流量。惟停等空間必須以清楚圖說標註，且後續營運階段散場時間與下午五六點交通尖峰時間重疊之散場計畫及交通管理策略應補充說明，及捷運營運狀況納入前開說明。

遠雄公司回覆	本局複審意見
1. 本案營運階段與下午尖峰時間之散場計畫及交通管理計畫與100年6月原核定交評報告書內容相同。 2. 交通尖峰時間路口分析圖附於 P176、P177。	1. 前次委員會業已討論確認臨停位置。 2. 有關4萬人尖峰時段活動散場，除交通管理計畫，周邊路口車流速度最多增加13.3秒，請交通局確認。 3. 4萬人尖峰時段，捷運增開一列專車，1小時21分完成疏散，若為2.5萬人則56分鐘可完成輸運，請遠雄團隊說明，回應里長訴求。

（四）涉其他單位權責部分：

    1. 查遠雄公司近期針對建築技術規則建築設計施工編第97條，於地下1層戶外安全梯進行防火區劃之改善規劃，請遠雄公司說明目前所提送報告書平面，是否同

106年6月8日台建中心審定之性能設計認可通知書之內容相符，另請建管處協助檢視。

2. 本次涉及57輛大客車地面層上下客議題，與100年核定之交評報告書內容不同，另目前捷運營運狀況亦與100年所提之交評計畫(僅有板南線)不同，請交通局協助檢視是否涉交通影響評估差異分析。

3. 本次變更項目請詳列成說明表，並以變更前後圖說對照及標註頁碼，頁碼編輯請統一格式，俾利檢視變更設計內容(P33、P34雖有檢附，但頁碼格式未統一，請修正)。

遠雄團隊所提大巨蛋模擬參數設定

日期：108.05.22
人數：59833+X（13733）

Attribute	Average	Min	Max
Males	44229	44229	44229
Female	29373	29373	29373
Age	46.38	17.00	80.00
Agility	4.40	2.00	7.00
Drive	8.21	1.00	15.00
FWalk(m/s)	1.00	0.40	1.20
Walk(m/s)	0.92	0.40	1.20
Crawl(m/s)	0.20	0.12	0.30
Leap(m/s)	0.80	0.48	1.20
Mobility	1.00	1.00	1.00
Patience(s)	3.61	1.00	1000.00
Response(s)	14.92	0.00	30.00
Weight(kg)	65.05	40.00	90.00
Height(m)	1.75	1.50	2.00

Component	Value
Hazard Model	ON
FIH Model Status	ON
FIN Model Status	ON
Irritant Status	OFF
FIC=1 options	All agents exited
FiCo2 Model Status	ON
Heat Model	Purser
VCO2 Model	Purser
Resp. Temp(C)	50.00
Resp. Smoke(l/m)	0.10

Resp. Rad Heat	ON
Smoke Feedback	ON
FIN Feedback	ON
Irritant Feedback	ON
Use CFAST Height	OFF
Rad. Heat Flux	Pain
Rad. Heat Flux Value	80

SWICH	VALUE				
	內定	地震	火災	恐攻	其他
Local Familiarity	ON				
All Main Exits	OFF				
Floor Potential Map	OFF				
Local Potential	OFF				
Maintain Target Exit	OFF				
Maintain Itinerary	OFF				
Transit Node Grouping	OFF				
Milling	OFF				
Specified Response	OFF				
Zone Events	OFF				
Natural Movement	OFF				
Extreme Behaviour	OFF				
Impatient	OFF				
Seat Jumping	OFF				
Wall Proximity	OFF				
Avoid Congestion	OFF				
Social Response	OFF				
Social Movement	OFF				
Stair Spacing	Packed				
Stair Edge Pref.	OFF				
Crawling	ON				

Smoke Stagger	ON				
Smoke Redirection	OFF				
Smoke Visual Coef.	2.00				
Signage System	None				
Lift Evacuation	OFF				
Evenly Use Stairs	OFF				
Max Sim.	ON				
Max Sim Time (s)	4200	4200	4200	4200	4200

註：
1. 以上表格欄位請各位委員填列，未填列視為同意內定設定，未來
   審議時將以委員會名義提出，非個人意見。
2. 倘有其他意見請於下方提供。

其他意見：

RELEASE NOTES

RELEASE NOTES:	**6.3.0 Revision 1.0**
RELEASE DATE:	**May 2017**
SOFTWARE:	**buildingEXODUS**
SOFTWARE VERSION:	**v6.3.0**
RELEASE DATE:	**May 2017**
USER GUIDE REVISION:	**6.3.0 Revision 1.0**

The Release Notes are intended to keep buildingEXODUS users up to date with the latest improvements in the software, inform users of known software bugs and of corrections to the User Guide, Theory Manual and Application Manual.

INTRODUCTION

Thank you for purchasing buildingEXODUS, the evacuation model for the built environment. buildingEXODUS is based on a set of sophisticated sub-models incorporating *people-people*, *people-fire* and *people-structure* interactions allowing the safety engineer to perform a range of evacuation simulations. buildingEXODUS was developed to provide a design and research tool that could be used by those concerned with evaluating the evacuation efficiency of occupied structures. Users should note that the prediction of evacuation performance is *not* an exact science. All evacuation simulation software, including buildingEXODUS, should only be considered an *aid* to evaluating the evacuation performance of a structure. It is not intended as a replacement of accepted good engineering practice, guidelines and judgement. Only those experienced in evacuation analysis should make use of the software and only after the user manual has been thoroughly studied. The user should pay particular attention to all the assumptions specified in the software manual and ensure that none of the conditions or assumptions are violated by their intended application.

Version 6.3 of the software includes a number of modifications in relation to the previous general release software, Version 6.2.

VERSION 6.3 MODIFICATIONS

The release of version 6.3 of buildingEXODUS incorporates a number of additions and alterations that are designed to make the software more user-friendly, more efficient and more useful. A list of these new features and modifications found in version 6.3 is provided below.

Version 6.3 Modifications
Functionality (Levels A, B and C)

- Saving Geometry Boundaries as DXF Files
  - *In the new release of buildingEXODUS it is possible to save the boundaries of specific floors as CAD DXF files. Each floor can be saved in a format which enables it to be imported into third party software (i.e. CFD fire modelling software, 3D visualisation software etc.). It is important to note that only the walls/lines present within the selected floor will be saved to the DXF. Hence all text, polygons and EXODUS objects (i.e. nodes, arcs etc.) will not be saved. All walls/lines will be saved within a single layer of the DXF file, with the corresponding units being in metres. All lines/walls saved within the DXF file will also be of default colour, hence any colours assigned to them within EXODUS will not be saved.*

User Interface (Levels A, B and C)
- Updated Data Output Options Dialogue Box
  - *The format of the Data Output Options dialogue box has been updated and simplified. The data attributes which can be output to the simulation output file (.SIM) have been grouped and separated onto different tabs, to make it easier for the user to navigate. In addition, some agent attributes which previously had not been available to output to the simulation output file have been added. These include agent travel speeds on stairs and escalators, in addition to agent tolerance to each irritant gas (i.e. both instantaneous and dose, Level C only).*

Hazard Model (Level C Only)
- Updated HCN Model
  - *The toxicity model defining the effect of HCN on agents within EXODUS has been updated in order to ensure compatibility with the most recent version presented in the SFPE Handbook, 5th Edition. The main change is that the HCN expression now explicitly incorporates the agent respiration rate during the exposure. Thus, the new HCN equation takes into account the HCN concentration to which the · agent is exposed, the exposure duration, AND the agent Respiratory Minute Volume (RMV). The time to incapacitation predicted using the previous HCN model is similar to the times predicted by the new model for people involved in light work with RMV values 25 L/min. For agents at rest during exposure, the previous model is more conservative than the new model, predicting incapacitation will occur sooner, but for agents involved in heavy work during exposure, the new model is more conservative. Both models produce approximately the same time to incapacitation for those involved in light work.*

- Updated Default VCO2*RMV Cap
  - *Within previous versions of the EXODUS toxicity model the Respiratory Minute Volume, RMV of an adult was by default assumed to not exceed 80 lit/min. Hence, when $VCO2*RMV = 80$ lit/min, VCO2 was considered to have reached its maximum value, and would therefore not increase any further. Within the updated toxicity model the breathing rate is capped at a lower value of 70 lit/min. The user still has the ability to manually change the maximum breathing rate within EXODUS.*

- Updated the Default PID Distribution (FICO equation)
  - *Versions of buildingEXODUS prior to v6.3 had two options for setting the Personal Incapacitation Dose (PID) used in the FICO equation. They could provide every member of the population with the same PID (set to 30% COHb) or they could assign the population with a uniform random distribution of PID set between an upper and lower limit (which was by default set to 25-35% COHb). Within the new release there are three options available for setting the PID:*

    - ***SFPE PID (Distribution) – Default Option::***
    Each member of the population is assigned a PID from the distribution defined within the SFPE Handbook (5th Edition) – values between 5% and 45%. Using this approach, each member of the population will have their own unique PID based on the SFPE values.

- *Fixed Value PID:*
Each member of the population is assigned the same single value for PID. Thus each member of the population has an identical PID. The default value is 30% COHb,

- *User Defined PID:*
Each member of the population is assigned a PID determined by the user. This requires the user to populate a distribution table similar to that in option 1.

- New Irritant Model Parameter, Tolerance Factor (TF)
  - *The TF attribute is a measure of the concentration of irritant gas (ppm) required to cause a given endpoint and is used in the FIC model. The endpoint can be severe mobility impairment or incapacitation depending on the TF selected. In previous versions of buildingEXODUS only the incapacitation endpoint was assumed and so the TF was not defined as a variable but simply a value selected from a distribution. A TF is specified for each irritant agent considered in the model e.g. TF_{HCL}.*

- Updated Agent Irritant Tolerance Concentration Model (FIC)
  - *For the purposes of evacuation analysis there are two types of irritant endpoints, escape impairment and incapacitation. Versions of buildingEXODUS prior to v6.3 only had the option to represent incapacitation, although this could have been changed to another end point by using a user specified value for the TF. However, no guidance was provided, with TF values only specified for incapacitation. In the new release, either endpoint can be specified with the lower threshold of escape impairment being the new default setting, with appropriate values of TF provided.*

    Furthermore, in previous versions of buildingEXODUS the Incapacitation TF model assumed a random uniform distribution with the range for each irritant varying according to values set in the SFPE handbook. In the new release there are five methods for assigning the TF, with the endpoints being either Escape Impairment or Incapacitation.

    - *SFPE Escape Impaired (Distribution) – Default Option:*
    Each member of the population is randomly assigned a TF for each irritant gas component from an assumed distribution based on data defined in the SFPE Handbook for Escape Impairment.

    - *SFPE Escape Impaired (Fixed):*
    Each member of the population is assigned a fixed TF for each irritant gas component corresponding to the SFPE Escape Impaired mean values. Thus using this approach, each member of the population has an identical TF for each irritant.

    - *SFPE Incapacitation (Fixed):*
    Each member of the population is assigned a fixed TF for each irritant gas component corresponding to the SFPE Incapacitation mean values. Thus using this approach, each member of the population has an identical TF for each irritant.

- *ISO 13571 Incapacitation (Fixed):*
  Each member of the population is assigned a fixed TF for each irritant gas component corresponding to the ISO 13571 Incapacitation mean values. Thus using this approach, each member of the population has an identical TF for each irritant

- *User Defined:*
  The user can specify the nature of the TF distribution to be applied for each irritant. This can either be a fixed value, a range or a distribution.

- New Irritant Model Parameter, Critical Irritant Incapacitation Factor (CIIF)
  - *The CIIF is a new parameter introduced due to the introduction of the new FIC option of Escape Impairment. The CIIF attribute defines the FIC value required to cause incapacitation. When the Escape Impairment option is used CIIF = 4.5. When Incapacitation model is used CIIF = 1.0. If user defined option is used CIIF = 0.0 by default. If the Escape Impairment model is used, exposed agents are considered unable to continue when FIC >= 1.0. In this condition the agent may become incapacitated by heat or other toxic gases. If the irritant concentration at their current location decreases so that FIC < 1.0, they will be able to resume the evacuation process. However, if the irritant concentration at their current location increases, they may become incapacitated by irritant gases if FIC >= CIIF i.e. 4.5. If Incapacitation model is used, exposed agents are considered incapacitated when FIC >= 1.0 = CIIF i.e. 1.0. Agent cannot recover under these conditions.*

- New Irritant Model Parameter, Critical Dose (CD)
  - *The CD attribute is a measure of the dose of irritant gas (ppm.min) required to cause a given endpoint and is used in the FLD model. The endpoint is considered to be fatality, but there are three different CD values that can be used depending on the FLD model used. In previous versions of buildingEXODUS there was only one option so the CD was not defined as a variable but simply a value selected from a distribution. A CD value is required for each irritant agent considered e.g. CD_{HCL}.*

- Updated Agent Irritant Tolerance Dose Model (FLD)
  - *In previous versions of buildingEXODUS, if FLD = 1.0 the agent was assumed to be incapacitated and not able to continue the evacuation and so were added to the mortuary. However, in reality death is not likely to occur during the evacuation but may occur several hours or several days after receiving the lethal dose. In the new version of buildingEXODUS FLD has no impact on an agent's ability to evacuate but can be used to assess the likelihood of the exposed agent surviving post evacuation. The FLD is thus not intended to be used as a critical factor describing evacuation or as a design limit but for estimations of the extent to which post-exposure deaths from lung oedema and inflammation are likely to occur. As a result, agents are not incapacitated due to excessive cumulative exposure to irritant gases (i.e. FLD ≥ 1.0).*

Versions of buildingEXODUS prior to v6.3 only had the SFPE FLD Critical Dose (CD) option. These values were arbitrarily distributed with the actual value for each individual being selected from a range of 50%*median to 200%*median. In the new release there are three options for assigning the CD_x values.

- **SFPE FLD Critical Dose – Default Option:**
  Each member of the population is assigned a CD_x for each irritant gas component as specified in the SFPE Handbook. Using this approach, each member of the population has an identical CD_x. This is based on mean values that are likely to cause fatality in 50% of the population.

- **AEGL-3 FLD Critical Dose:**
  Each member of the population is assigned a CD for each irritant gas component from the AEGL-3 distribution specified in the SFPE Handbook. Using this approach, each member of the population has an identical CD based on the AEGL-3 values and so is very conservative, taking into consideration particularly vulnerable members of the public.

- **User Defined FLD Critical Dose:**
  Each member of the population is assigned a CD for each irritant gas component based on the user specification.

- New Heat Model Parameter, Radiant Heat Threshold (RHT)
  - *In previous versions of buildingEXODUS, the critical radiative threshold (KW/m^2) value above which the FIHr is calculated was defined internally and so users could not alter this value. This value was set to $1.7\ KW/m^2$. In the new release, a user defined parameter has been introduced, the Radiant Heat Threshold (RHT) measured in units of KW/m^2, allowing the user to specify the critical value of radiant heat. The default value remains $1.7\ KW/m^2$.*

Revisions to User Manual
- The user manual has been altered to reflect the changes specified above.

REPORTING BUGS

Any complex software product is likely to contain programming bugs, buildingEXODUS is no exception! While we make every effort to reduce the likelihood of bugs occurring, it is impossible to guarantee that bugs will not occur. In the majority of cases, bugs that occur will be in obscure parts of the software that will virtually never appear in normal operation. When bugs do occur, they are likely to either be insignificant or there will be a simple way to work around the bug. However, in some cases there will not be a way to work around the bug or the bug may be of a serious nature. It is our intention to report these types of bugs to our users whenever practical. Please note that we will endeavour to fix all known bugs however, the more serious bugs will obviously take priority.

When reporting bugs please ensure that you take note of the error messages and provide as much information about how and under what circumstances the problem occurred. It is important to note all the options that you used in setting up the simulation when reporting the problem.

Bugs 6.2.0:

1. Fixed an issue with batch mode using a default OpLib if the ESO filename started with a string which matched one of the default types. For instance, if the user loaded a file "OpLib DefaultMyOpLibFile", EXODUS would only see this as "OpLib Default"

2. Fixed a licence expiry date calculation issue, where a warning message was displayed unnecessarily. Sometimes EXODUS would warn the use that their licence is going to expire a month early. This could occur if the current month has more days in it than the expiry month and the expiry date was near the end of the month.

3. Fixed issue with using replay files and source nodes, where source nodes could generate different generation rates.

4. Updated the node dialogue so that the Width value is only shown for attractor nodes, since including it for all node types incorrectly gave the impression that nodes have a width. For all other node types the Width is merely displayed as "N/A".

5. Fixed a simulation reset issue which meant that some run time itinerary tasks were not being removed from agent's itinerary. This could occur if the agent's task was not originally in the EXODUS target group.

6. Fixed a bug related to removing unused transit node catchment areas which could under certain conditions cause EXODUS to crash. This was for transit node groups, and could occur when either the catchment area was not needed during the simulation or was zero size.

7. Corrected a bug related to the use of lifts where the user defined floor sequence started with floor zero.

8. Simplified the auto floor link functionality so that only one transit node is now included in each floor link. Previously, separate transit nodes (i.e. stairs) connected to adjacent nodes would have been connected to the floor above via the same floor link. This would often appear confusing and hence difficult for users to understand how the floors were connected.

9. Added the ability for users to switch arc link order in floor links. The reordering of arc links was done to reduce the number of crossing arc connections, thereby making it easier for users to see how floors were connected.

10. Fixed issue with transit node staircases with only 2 risers. Previously, defining transit node stair cases with 2 or fewer steps would result in the corresponding height information of the stair being lost (i.e. EXODUS would calculate the wrong travel length).

11. Updated the Panel Population dialogue box so clicking Cancel undoes changes related to irritant values.

12. Fixed an issue when non-responding agents failed to move when they should have been milling.

13. Updated the random number generation to avoid duplicate sim seeds being used when simulations run in less than a second.

14. Fixed an error with the lift congestion redirect flag not being reset. As a result, agents could be considered as having redirected as a result of congestion when in reality they have merely used another lift.

15. Fixed memory leaks related to minimising the number of vertices for EXODUS generated polygon. Previously, vertices were being removed but not deleted.

16. Updated the % rider condition code, changed from "<" to "<=" in the test to determine whether an agent should be a rider on an escalator/travelator.

17. Fixed issue with escalator "riding" agents using the wrong spacing on entering the escalator transit node.

Version 6.2.0 Enhancements
    1. All bugs in version 6.2.0 have been addressed.

USER NEWS
We like to hear about your buildingEXODUS applications. Feel free to send us news about your buildingEXODUS applications and experience at exodus@gre.ac.uk. A selection of these could be featured on our website at http://fseg.gre.ac.uk. Also, if you have produced a journal, conference or magazine article about your use of buildingEXODUS, send us a copy and we will feature them on our web page and other EXODUS related publicity.

SOFTWARE NEWS
The buildingEXODUS development team is constantly working on developments for future releases of buildingEXODUS. Several of these are already in prototype form and will be included in subsequent model releases. These include:

- Enhanced Circulation Model with adaptive itineraries, urgency and emotional behaviour.
- Hybrid representation of space to include Coarse and Fine nodes and Continuous representation of space.
- Spatial navigation, where agents choose sub-optimal routes based on their personal preferences.
- Improved scenario generation tools.
- Import of OpenStreetMap (OSM) data.
- Enabling users to write their own lift dispatch algorithms via external Python code.
- Enhanced vrEXODUS.

If you have any features that you would like to see in buildingEXODUS, drop us a line and let us know what they are and why you need them.

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http://fseg.gre.ac.uk/exodus