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Városliget Zrt.

# Liget Budapest Tervpályázat

Az Új Nemzeti Galéria és Ludwig Múzeum  
új épületének tervezésére kiírt nyílt  
építészeti tervpályázatának  
Zárójelentése

# 1. A TERVPÁLYÁZAT PONTOS CÍME, CÉLJA, TÁRGYA ÉS JELLEGE CÍME

„Az Új Nemzeti Galéria és Ludwig Múzeum új épületének megtervezése”

## CÉLJA

A tervpályázat célja azoknak a tervezőknek a megtalálása, akiknek pályaművei:

- funkcionálisan kielégítik a 21. századi múzeumi elvárásokat, flexibilis tereket biztosítanak a következő évtizedekre a beköltöző intézményeknek és megfelelő körülményeket a látogatóbarát működéshez
- a kortárs építészet legmagasabb színvonalán maradandó esztétikai élményt is nyújtanak a látogatóknak és hozzájárulnak Budapest épített örökségének gazdagításához;
- tisztelettel kezelik a Városliget történeti parkját és környezetét;
- egyedi, erőteljes építészeti gondolatot megfogalmazó épületekből álló, jól felismerhető és azonosítható együttest hoznak létre, amely képes növelni Budapest és a magyar kultúra nemzetközi ismertségét;
- nyitott, átlátható, hívogató közösségi tereket biztosítanak Budapest lakóinak és a belföldi és külföldi látogatóknak egyaránt;
- a fenntartható építészet példaértékű, napjaink elvárásainak innovatív módon megfelelő épületek;
- okos megoldásokon alapulnak, biztosítva az elvárt költséghatékonyságot;
- hosszú távon gazdaságosan üzemeltethető megoldást jelentenek a bennük működő múzeumi intézmények számára

## TÁRGYA

Magyarország kormánya elkötelezte magát amellett, hogy új épületeket emel Budapesten hat kiemelkedő jelentőségű kulturális intézmény számára, a Liget Budapest fejlesztés részeként. Képzőművészet, építészet, néprajz, zene és fotográfia: ez az az öt terület, amelynek vezető intézményei egymás mellé kerülnek a Városligetben, számos más, több mint száz éve itt működő múzeum és egyéb közintézmény mellé, Budapest egyik legrégebbi parkjában, párhuzamosan annak teljes rehabilitációjával.

**Az Új Nemzeti Galéria**, mint gyűjtőkörének legfontosabb magyarországi közgyűjteménye, a 19. század elejétől a jelenkorig gyűjti, őrzi és mutatja be az európai és a magyar művészettörténet emlékeit. A műtárgyakat magas szakmai színvonalon, megfelelő tudományos megalapozottsággal, nemzetközi kontextusba illesztve tárja

a látogatók elé állandó és időszakos kiállításain úgy, hogy ezen belül a magyarországi folyamatok önállóan is tanulmányozhatóak legyenek. Az Új Nemzeti Galéria állandó kiállításának korszakhatára 1800-tól 1950-ig terjed. Az Új Nemzeti Galéria küldetésének tekinti, hogy a kulturális örökség megőrzésén túl a „nyitott múzeum” és a „mindenki múzeuma” alapelvek szerint széles kör számára hozzáférhető legyen. Feladata, hogy nemzeti identitásteremtő helyszínné, turisztikai célponttá, illetve a tanulás, az ismeretátadás kiemelt bázisává váljon.

A múzeum egyben művészettörténeti tudományos kutató hely, amelyben a műtárgyakra vonatkozó alapkutatás, a tárgyak kontextualizálása folyik, így az intézmény a művészettörténeti és a muzeológiai módszertani megújulás bázisa is. Kutatási eredményeit kiállítások, publikációk formájában teszi a társadalom minden rétege számára hozzáférhetővé, átélhetővé és szerethetővé. Az Új Nemzeti Galéria a legújabb hazai és nemzetközi kortárs művészeti és szellemi áramlatokra is nyitott intézmény, amelyen belül a kortárs társadalmi és művészeti dialógus új, önálló műhelyként működik a GAIA lab.

Az Új Nemzeti Galéria szoros szakmai kapcsolatot ápol a nemzetközi múzeumi világgal, kezdeményező módon véve részt a hazai és nemzetközi művészeti, művészettörténeti és muzeológiai diskurzusban. Az Új Nemzeti Galéria múzeumpedagógiai tevékenysége révén nagy szerepet vállal a fiatalok vizuális nevelésében, segítve a köznevelési intézmények iskolai és iskolán kívüli oktatási programjainak megvalósítását. A különböző társadalmi rétegek igényeinek sokrétű kiszolgálásával, a digitális tartalmakhoz való teljes hozzáférés biztosításával orientálja és neveli a látogatókat. A hátrányos helyzetűeket, mozgássérülteket, fogyatékkal élőket kiemelt látogatói csoportként kezeli, célja, hogy speciális programok szervezésével elősegítse társadalmi integrációjukat. A társművészetekkel való együttműködések, színházi, zenei és irodalmi programok befogadásával kreatív párbeszédre inspirálja a különböző művészeti ágak alkotóit, és hozzájárul a közművelődés szintjének és színvonalának emeléséhez.

**A Ludwig Múzeum - Kortárs Művészeti Múzeum** Magyarország vezető jelenkori és kortárművészeti intézménye. Nemzetközi kollekcióját Peter és Irene Ludwig műgyűjtőkalapozták meg, majd a magyar kormány emelte az ország első számú kortárs bemutatóhelyévé és módszertani központjává. Az Új Nemzeti Galériával közös, új épületében a magyar és nemzetközi képzőművészet történetének és legjelentősebb alkotóinak kiállítóhelye, az 1950-től napjainkig terjedő korszakra specializálódva. A múzeum elsődleges feladata a gyűjtőkörébe tartozó alkotások, tárgyi emlékek és dokumentumok gyűjtése, őrzése, kezelése és kutatása - valamint a tárgyak és a kutatási emlékek kiállításokon és más formákban történő bemutatása. Kiemelt feladata a magyar és nemzetközi kortárs művészet törekvéseinek párhuzamos bemutatása, a kortárs magyar művészet nemzetközi kontextusba helyezése.

A Ludwig Múzeum - Kortárs Művészeti Múzeum egyedi feladatokat vállal a magyar múzeumi rendszerben, mint a kortárs művészet bemutatásának módszertani központja. Kurátorképzéssel, múzeumpedagógiai és muzeológiai kutatásokkal, rezidenciaprogrammal, társművészeti rendezvényekkel növeli a kortárs művészet társadalmi elfogadottságát, közvetíti és segíti megérteni napjaink vizuális kultúrájának összetettségét.

# JELLEGE

Előminősítéses, kétfordulós, nemzetközi nyílt, tervpályázat.

## 2. A LEBONYOLÍTÁS RÖVID ISMERTETÉSE, A BEÉRKEZETT PÁLYAMŰVEK SZÁMA ÉS ÁLLAPOTA

A tervpályázati eljárás a tervpályázati eljárások szabályairól szóló 305/2011. (XII. 23.) Korm. rendelet előírásainak és a Tervpályázati Kiírásban foglaltak maradéktalan betartásával zajlott le.

Kiíró az Európai Unió hivatalos lapjában 2014. november 22. napján, 2014/S 226-399905 számon tervpályázati kiírást jelentettek meg.

### 2.1 A TERVPÁLYÁZAT MÉRFÖLDKÖVEI

#### **Előminősítési szakasz:**

Előminősítési jelentkezés kezdete	2014. 10. 31.
Előminősítés jelentkezés határideje	2014. 12. 11.
Előminősítési jelentkezés elbírálása	2014. 12. 19.

#### **Tervezési szakasz:**

Tervezési szakasz kezdete, alkalmas pályázók meghívása	2014. 12. 19.
Helyszíni szemle	2015. 01. 07.
Kérdések beérkezésének határideje	2015. 01. 13.
Válaszok közzététele	2015. 01. 20.
Pályaművek beérkezésének határideje	2015. 03. 03.
Eredményhirdetés	2015. 04. 14.

## 2.2 BÍRÁLÓBIZOTTSÁGI TAGOK

	Pozíció	Név / pozíció
1	Tag	dr. Baán László, miniszteri biztos, a Szépművészeti Múzeum főigazgatója
2	Tag	Edwin Heathcote, a Financial Times építészeti kritikusa, építész
3	Tag	Finta Sándor, Budapest főépítésze
4	Tag	Fekete György, a Magyar Művészeti Akadémia elnöke, belsőépítész
5	Tag	Fülek Zsolt, építészetért felelős helyettes államtitkár, építész
6	Tag	Sáros László György, a Magyar Építőművészek Szövetségének elnöke, építész
7	Tag	Eva Jiricna, építész
8	Tag	Dr. Klaus Albrecht Schröder, igazgató, Albertina, Bécs
9	Tag	Paula Cadima, tanszékvezető-helyettes, AA London School of Architecture, építész
10	Tag	Rouaida Ayache, építész
11	Tag	Juhani Katainen, Tempepe University of Technology épí- tész karának volt dékánja, építész
	Póttag	Katona András, főosztályvezető, Építészetért és Építés- ügyért Felelős Államtitkár, építész
	Póttag	Bálint Imre, a Budapesti Építész Kamara elnöke, építész
	Póttag	Sághi Attila, Forster Gyula Nemzeti Örökségvédelmi és Vagyongazdálkodási Központ elnöke, építőmérnök

## 2.3 ELŐMINŐSÍTÉSI SZAKASZ

Az eljárás első szakaszában a Tervpályázati Kiírás alkalmassági és rangsorolási követelményei szerint kiválasztásra került a keretszámnak megfelelő tizenegy pályázó, melyek meghívást nyertek a pályázat tervezési szakaszába. A tizenegyegyes keretszám a nyolc, Kiíró által közvetlenül felkért és alkalmas pályázó, illetve három, az alkalmassági feltételeket teljesítő és a rangsorolás során kiválasztott Kiíró által nem közvetlenül felkért pályázókból állt össze.

## 2.3.1 ALKALMASSÁGI FELTÉTELEK

A tervpályázatra jelentkezők mindegyikének meg kellett felelnie az alkalmassági feltételeknek, melyek a referenciák bemutatásával a pályázó szakmai kompetenciáját, a személyi és garanciavállalási feltételek teljesítésével pedig a pályázó szerződéskötésre való alkalmasságát támasztották alá. A referencia feltételek teljesülése a Konzorcium, vagy Tervezői Csapat legalább egy tagjára nézve, a személyi- és garanciavállalási feltételek teljesülése a Konzorcium, vagy Tervezői Csapat egészére nézve volt kötelező érvényű. Az előminősítési jelentkezés és az igazoló dokumentumok a Tervpályázat hivatalos honlapján keresztül, a pályázó személyes oldalára feltöltve kerültek benyújtásra.

Referenciának csak a tervpályázati kiírás megjelenését megelőző 10 évben használatba vett kulturális célú közhasználatú épület volt elfogadható.

A személyi erőforrás feltételek teljesítéséhez a csapattagok kompetenciáját és tervezői minőségét az önéletrajz és a rendelkezésre álló igazoló dokumentum feltöltése által igazolta a pályázó.

A garanciavállalási feltételnek való megfelelés igazolásához a Pályázónak igazolni kellett, hogy az utolsó lezárt üzleti évének nettó árbevétele és az utolsó lezárt öt üzleti évének összes nettó árbevétele elérte, vagy meghaladta a kiírásban foglalt árbevételi szintet. A garanciavállalási feltételek teljesülését a Pályázó az éves beszámolók vonatkozó oldalainak angol fordításával igazolta, melyek szintén a honlapon kerültek feltöltésre.

## 2.3.2 RANGSOROLÁSI SZAKASZ

A közvetlenül felkért nyolc pályázón kívül három pályázó került kiválasztásra az alkalmassági feltételeket teljesítő, a Kiíró által nem közvetlenül felkért jelentkezők közül a rangsorolási szempontok alapján. A rangsorolás a pályázók által, a honlapra feltöltött információk és dokumentumok alapján történt. A rangsorolási szempontok súlyozott átlaga szerint kerültek a jelentkezők sorrendbe állításra. Az első három, legkevesebb pontszámmal rendelkező jelentkező került kiválasztásra és nyert meghívást a tervezési szakaszba.

A rangsorolási szempontrendszer a következő:

Szempont	Súlyszám
1. A követelményeknek megfelelő és benyújtott referenciamunka darabszáma	10
2. A követelményeknek megfelelő és benyújtott referenciák összes bruttó szintterülete	15
3. A követelményeknek megfelelő és benyújtott referenciák közül a 3 legnagyobb referencia összes szintterülete	25

4. Szakmai díjak darabszáma	25
5. Alkalmassági követelményekben szereplő szakemberek létszámán felüli szakemberek száma	15
6. Árbevétel	10

Az alkalmassági feltételek és rangsorolás szerint a tervezési szakaszba meghívott pályázók az alábbiak:

**Kiíró által közvetlenül felkért, alkalmas pályázók:**

- Ateliers Jean Nouvel
- Balázs Mihály Építész Műterme és a BME Építészmérnöki Kara
- David Chipperfield Architects
- Mecanoo
- Nieto Sobejano Arquitectos S.L.P.
- Sejima and Nishizawa and Associates
- Snøhetta
- Zoboki- Demeter & Társaik Építésziroda

**Kiíró által nem közvetlenül felkért, alkalmas pályázók a rangsorolás szerint:**

- gmp International GmbH Architects and Engineers, Leonhardt, Andrae und Partner Beratende Ingenieure VBI AG, ZWP Ingenieur-AG, bogner.cc KG
- Henning Larsen Architects, Arup Engineering, Gallagher and Associates, Transolar Energietechnik GmbH, MAN MADE LAND Bohne Lundqvist Mellier GbR
- Davis Brody Bond Architects and Planners, Földes Architects, Buro Happold Engineering, Ken Smith Landscape Architect.

## 2.4 TERVEZÉSI SZAKASZ

Az előminősítési szakasz eredményhirdetésének napján meghívást kapott a keretszámnak megfelelő tizenegy pályázó a Tervpályázat tervezési szakaszába. A tervezési szakasz a titkosság betartása mellett zajlott le.

A Kiíró 2015. 01. 07-én helyszíni szemlét tartott, mely során a résztvevőket bejárásra kerültek a jelen pályázat tervezési területe és a korábban kiírt Kétfordulós Nemzetközi Tervpályázatok tervezési területei. A helyszínbejárás után a résztvevők prezentációk segítségével tájékozódtak a Liget Budapest projektről és mélyebben megismerték az Új Nemzeti Galéria és Ludwig Múzeum által, a tervezendő épület felé támasztott követelményeket.

A pályázók 2015. 01. 13-ig tehetőek fel a honlapon keresztül, a titkosság megtartása mellett kérdéseiket, melyekre a Kiíró 2015. 01. 20-ig válaszolt. A válaszok a közzététel után a Tervpályázati Dokumentáció részévé váltak.

A tervezési szakasz végéig, 2015. 03. 03-ig a pályaművek beadásra kerültek.

## 2.5 PÁLYÁZATOK ÉRTÉKELÉSE

A tervezési szakaszba meghívott tizenegy pályázó közül tízen nyújtottak be pályaművet, melyek határidőn belül beérkeztek. A tervpályázati csomagok kielégítették a vonatkozó formai követelményeket. A pályázati csomagok bontására 2015. 03. 04-én került sor a Kiíró által biztosított hivatalos helyiségben.

A bontási eljárás során megállapításra került, hogy az alábbi pályamű a Kírás 66. oldalán foglaltak (5.1.11 Kizárás alpont) értelmében kizárásra kerül az alábbi okok miatt:

- tartalmi és formai követelményeket nem teljesítő pályamű:

Azonosítószám	Munkarészek megnevezése	Darab-szám	Megjegyzés
9764	A3 füzet / A3 Booklet CD Tabló	1 1 13	A pályázat nem a kijelölt tervezési területen belülre készült. Magyar nyelvű szöveg a füzetben és pályamunkákon

A zsűri munkáját segítő szakértői csoport 2015. 03. 05-én megkezdte a pályaművek véleményezését, az értékelési szempontoknak megfelelően:

Párbeszéd a környezettel		
Városképi beágyazottság	Nagy Béla	
Párbeszéd a szomszéd épülettel		
Párbeszéd a ligettel		
Az épület megközelítése		
Tájéolás		
Parkolási és közlekedési rendszer		
Kerékpáros és gyalogos útvonalak		

<b>Építészet és tömegalkotás</b>				
Az épület építészeti összehatása, tömegeinek aránya	Hartvig Lajos			
Az épület egyedi, innovatív külső és belső megjelenése, jellege				
Az épület térkapcsolatai				
Az épület tereinek építészeti minősége				
<b>Technológia és funkció</b>				
Látogatói élmény	LORD Culture Laure Confavreux, Delphine Miel	Magyar Nemzeti Galéria	Ludwig Múzeum	Horn Márton
Múzeumtechnológiai megoldások				
Funkcionális kapcsolatok				
Közlekedési rendszerek				
<b>Fenntarthatóság</b>				
Energiahatékonyság	Kovács Nándor			
Egészség és komfort				
Vízgazdálkodás				
Építőanyagok környezetterhelése				
Innováció	Kalmárné Fejes Zsuzsanna			
Ökológia				
<b>Költségek</b>				
Az épület kivitelezésének várható költsége	Sándor Márk			
Az épület fenntartásának várható költsége	Kocsány János			

A Bíráló Bizottság (továbbiakban B.B.) kétnapos (2015. március 24-25.) helyszíni Zsűrizés során választotta ki a díjazott pályaműveket és meghatározásra kerültek a hirdetmény nélküli tárgyalásos eljárásban meghívásra kerülő pályaművek.

A kilenc, érvényes pályamű közül a B.B a 3759-es és 8603-as azonosítószámú pályaművet első helyezettnek, míg a 3087-es és 8210-es azonosítószámú pályaművet második helyezettnek szavazta meg. A harmadik hely nem került kiosztásra.

A tervpályázatot követő hirdetmény nélküli tárgyalásos eljárás a 3759-es és 8603-as azonosítószámú pályamű tervezőjével kerül lefolytatásra.

Fentiekre tekintettel a B.B. a tervpályázatot eredményesnek nyilvánította.

### 3. A DÍJAZOTT PÁLYAMŰVEK RANGSOROLÁSA, ILLETVE RANGSOROLÁS NÉLKÜLI EREDMÉNY ESETÉN A DÍJAZOTT ÉS MEGVÉTELT NYERT PÁLYAMŰVEK FELSOROLÁSA

Díjazásban részesülő pályaművek azonosítószámok szerint:

1. helyezett:	3759
1. helyezett:	8603
2. helyezett:	3087
2. helyezett	8210

A hirdetmény nélküli tárgyalásos eljárásban ajánlattételre felhívott pályaművek azonosítószáma:

3759  
8603

A meghívási díjat a pályázati anyagot beküldő pályázók mindegyike megkapja, kivéve a 9764-es számút, mert pályaműve kizárásra került. A tervpályázat díjazása a következő:

<b>Előminősítési szakasz</b>	<b>díjak</b>
meghívási díj/ meghívott	20 000 EUR
<b>Tervezési szakasz</b>	<b>díjak</b>
1. díj	65 000 EUR
2. díj	35 000 EUR
3. díj	Nem került kiosztásra
<b>Díjak összesen</b>	<b>380 000 EUR</b>

A tervpályázat összdíjazása az eredetileg megállapítotthoz képest (345 000 EUR) megemelésre került, tekintettel a díjak megváltozott kiosztására. A Kiíró vállalása értelmében a többletfedezet rendelkezésre áll.

## 4. A DÍJAK ÉS MEGVÉTELEK ELOSZTÁSA, VALAMINT ENNEK RÖVID INDOKLÁSA

A Bírálóbizottság javaslata alapján a díjazásra a Tervpályázati kiírásban meghatározottak szerint és mértékben kerül sor az 1. és 2. helyezett pályaművek között, továbbá a Tervpályázati kiírásban meghatározottak alapján a tervpályázati eljárás 2. szakaszába meghívásra került pályázók részére (azonosítószámok: 8591, 6418, 8210, 0476, 3759, 8603, 2564, 3405, 3087) meghívási díj kerül kiosztásra az előre meghatározott mértékben.

### **Rangsorolás nélküli Első helyezett, 3759-es számú pályamű:**

Az épület környezettel való kapcsolata erős, a látogatói útvonal többszöri lehetőséget kínál a parkkal való párbeszédre. Látogatói élmény szempontjából innovatív a megoldás, a rámpákon való kettős útvonalú közlekedés vizuálisan érdekes kapcsolatokat teremt, az ebből adódó széttagolt tömeg funkcionálisan azonban problémás lehet. Környezeti és fenntarthatósági szempontból sok előnnyel rendelkezik, különösen a természetes fény és szellőzés terén. A belső térszervezésből adódó tömeg kissé kaotikus, a továbbtervezés során átgondolásra javasolt.

### **Rangsorolás nélküli Első helyezett, 8603-as számú pályamű:**

Emblematikus épület, mely illeszkedik a Liget projektben való meghatározó szerepéhez, valamint nemzetközi jelképpé is válhat. A tömegformálás egy nagyvonalú gesztusra épül, mely meghatározza a belső térszerkezetet is, a két múzeum megfelelően elkülönített, a funkcionális kapcsolatok átgondoltak. Az épület erőssége hogy kívülről megközelíthető az épület teteje, ami a közterületek folytatásaként visszaadja a parkból elvett területet és új közösségi teret hoz létre. A finom anyaghasználat nemességet kölcsönöz neki, formavilága nagyon gazdag. Az épület jelenleg túllépi a szabályozásban megengedett 40 méter magas építészeti jelre vonatkozó alapterületi előírást, ezt a továbbtervezés során figyelembe kell venni.

### **Rangsorolás nélküli Második helyezett, 3087-es számú pályamű:**

Az épület kívülről szervesen felépített, tömegformálása miatt, mely természeti képződményre utal, kortalannak tekinthető. Az épület környezettel való párbeszéde erős. Belülről logikusan felépített, alaprajza kisebb változtatásokkal megfelelő egy múzeumnak. Múzeumtechnológiai szempontból probléma a falak amorf vonalvezetése. Természetes fény csak a külső homlokzaton alkalmazott perforált fémlemezen keresztül érkezik, mely egyes terekben (pl. irodákban) nem elegendő.

**Rangsorolás nélküli Második helyezett, 8210-es számú pályamű:**

Építészeti meggyerő épület, világos, finoman kidolgozott. Engedi a parkot átáramlani rajta, nem monolitikus, egyszerű épület. A többi pályázóhoz képest kevesebb területet foglal el a parkból. Belső térszerkezése, a „házban ház” elv, a felülről jövő fény és az átláthatóság építészeti értékes momentumok, múzeumtechnológiai szempontból viszont problémás. A szigorú légzárási előírások (hőmérséklet, páratartalom) betartására nincs lehetőség, mivel a két múzeum össze van nyitva. Problémás a kiállítások átrendezése, illetve az Új Nemzeti Galéria kiállítótereinek széttagoltsága. A kiállító terek szempontjából a legfontosabb kerületi falfelület hiányzik a középső kiállítóterekben. A természetes fény kizárásának lehetősége korlátozott.

## RANGSOROLÁS NÉLKÜLI PÁLYAMŰVEK

**0476**

Az épület tájolása kiváló, azonban kevésbé kommunikál a környező épületekkel, azonban ezt enyhítik a felfutó zöld rámpák, melyek a múzeumi nyitvatartási időn kívüli funkciókkal jó kapcsolatot alakítanak ki az épület környezetével. Könnyen megközelíthető, parkolási rendszere jó, azonban a lehajtó rámpák a tervezési területen kívül esnek. Az épület tömegformálása az egykori Iparcsarnokot idézi. Annak ellenére, hogy az épület törekszik kapcsolatot teremteni a Városligettel, építészeti tömegformálása nem ezt tükrözi. Az Új Nemzeti Galéria és Ludwig Múzeum terei vizuálisan nincsenek egymástól elszeparálva. A kiállítóterek kevésbé flexibilisek és kevés látogatói élményt nyújtnak. Az épület tartószerkezeti megoldásai a megvalósíthatóság határain mozognak, kivitelezésük roppant költséges. Az épület homlokzati elemei kiforratlanok, tömegformálása átgondolásra szorul.

**2564**

Az épület a megközelítési irányok mindegyike felől elérhető, fő tájolása azonban a Zichy Mihály út felé esik. Jó megoldás a bejárat terepszintről való felemelése, mely megfelelő intimitást nyújt. Kevésbé jó megoldás azonban, hogy a vendéglátó funkciók nem a park felé orientáltak. Építészeti tömegformálása igen racionális, a belső terek a fő, egymásra merőleges tengelyekre rendezettek. Ez a szigorú rendezettség az épület külső megjelenésén is visszaköszön. Az terek funkcionális elrendezése konzekvensen követi az építészeti koncepciót, mely hatékony, de látogatói élményben túl monoton megoldást eredményez. A Ludwig Múzeum alsó szinten való elhelyezésével az intézmény alárendelt szerepbe kerül.

**3405**

Letisztult építészeti koncepció, mely célja a négy kubusra tagolt tömeggel és a köztük létrejövő „utcákkal” kapcsolatot teremteni a környezettel. Mivel a közösségi funkciók a kialakuló utcák felé tájoltak, így a Városligettel létrejövő kommunikáció nem sikeres. Az épülettömegek karakterét és méretét funkciójuk határozza meg. A terepszint alatt elhelyezett előcsarnokból, a múzeumi tömbökbe vezető lépcső pár jó megoldást nyújt a koncepcióból eredő „zsákutca” hatás elkerülésére. A négy külön álló tömb koncepciója a közlekedő területek jelentős növekedését okozza. A Ludwig Múzeum időszakos

területei nagy része keskeny térbe került elhelyezésre. A létrejött önálló közlekedő magok miatt, a tartószerkezet nagy fesztávja ellenére a kiállítóterek kevésbé flexibilisek, kevés tartalék területet nyújtanak.

#### 6418

A megsokszorozott modulokból létrejövő tömeg fő tájolási irányai Zichy Mihály út és a Hermina út. A közösségi funkciók megfelelő telepítésével az épület kapcsolatot teremt a környezetével. Tömegformálását tekintve próbál a tájba illeszkedni, azonban megjelenése miatt ez kevésbé sikeres. Belső terei racionálisak, rendezettek. Egyedi formája, színes homlokzata figyelemfelhívó, a racionális belső elrendezésnek köszönhetően a látogatók épületen belüli tájékozódása könnyű, azonban az épület gyenge látogatói élményt nyújt, a kiállítóterek elrendezése repetitív, monoton. A belső terek kevésbé vannak kapcsolatban a külvilággal. A múzeumpedagógiai és rendezvény terek nagy része a terepszint alá került, mely által nincs természetes megvilágításuk és kilátásuk a Városliget felé.

#### 8591

Kompakt tömegformálás, a fő megközelítési irányok mindegyike felől elérhető. Kapcsolata a parkkal megfelelő, a vendéglátó funkciók a Zichy Mihály út felé tájoltak. Az épületnek nincs alárendelt homlokzata, nyitott a park felé. A tető a koncepció erős részét képezi. Térszervezési viszonya kettős. Amíg a Ludwig Múzeum terei flexibilisek, elrendezésük innovatív, a tető segítségével kommunikál a parkkal, addig az Új Nemzeti Galéria terei, melyek egy dobozba vannak kényszerítve, bonyolultak, funkcionálisan és esztétikailag nem megfelelőek. A szerkezet optimalizációjának hiánya miatt keskeny terek jönnek létre, mely a flexibilitást gátolja. A bejárat megkettőzése miatt a látogatók tájékozódása nehézkes, a két előcsarnokot összekötő útvonal bonyolult és szűk.

## 5. A TOVÁBBTERVEZÉSE VONATKOZÓ AJÁNLÁSOK

Jelen jegyzőkönyv 4. pontjában foglaltak szerint.

## 6. A TERVPÁLYÁZATOT KÖVETŐ HIRDETMÉNY NÉLKÜLI TÁRGYALÁSOS ELJÁRÁSBAN AJÁNLTÁTELEI FELHÍVÁSRA VONATKOZÓ AJÁNLÁSOK

Jelen jegyzőkönyv 4. pontjában foglaltak szerint. A B.B. döntése értelmében a hirdetmény nélküli tárgyalásos eljárásban ajánlattételre az 1. helyezettnek megjelölt 2 db pályamű (3759, 8603) tervezői kerülnek felhívásra.

# 1. sz. Melléklet

## Részletes szakértői bírálatok

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# DIALOGUE WITH THE ENVIRONMENT

## INTEGRATION INTO THE CITYSCAPE

### BÉLA NAGY

**0476**

The cantilevered mass creates larger plan on the higher levels, increasing the mass of the more than 31 m high building mass (inverted pyramid arrangement). The veil-concept is really poetic. Unfortunately some of the technical elements and the ramps are outside of area to be built up („building place”)

**2564**

Horizontally articulated regular cube with garden walls and landscaping. The smallest building concept of the submissions.

**3087**

Unique, enlarged ornamental piece, work of art in the middle of the park.

**3405**

Clearly articulated regular cubes concept with „streets” between the masses.

**3759**

Unique slashed building mass, exciting building concept in the green.

**6418**

Undulating surface, artificial landscape, built from repetitive architectural elements with an architectural landmark (40 m high tower).

**8210**

Floating white cube concept with transparent ground level. Clear, well defined concept. Unfortunately some of the technical elements are outside of area to be built up („building place”)

**8591**

Compact layout of sloped building masses.

**8603**

Pyramids in the park. One mass divided on two parts. The building has got a relatively closed mass, with 40 meter height (one of the tallest building of submissions).

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# DIALOGUE WITH THE ENVIRONMENT

## DIALOGUE WITH NEARBY BUILDINGS

### BÉLA NAGY

**0476**

The high building not communicates with surrounding buildings, because of the distance (about 120-125 meters from the next building). The proposed green slope with trees decreases this impact.

**2564**

The building not communicates with surrounding buildings, because of the distance (about 120-125 meters from the next building). The small building height and the proposed foreground with trees decreases this impact.

**3087**

The building not communicates with surrounding buildings, because of the distance (about 120-125 meters from the next building). The proposed foreground with trees decreases this impact.

**3405**

The concept of the devided masses reinforces the dialogue with the surroundings.

**3759**

The building not communicates with surrounding buildings, because of the distance (about 120-125 meters from the next building). The proposed foreground with trees decreases this impact.

**6418**

The relatively low main building not generates problems with surrounding buildings, because of the distance (about 120-125 meters from the next building). The proposed foreground with car and truck traffic may be problematic.

**8210**

The building not communicates with surrounding buildings, because of the distance (about 120-125 meters from the next building). The proposed foreground with trees and rehabilitated sports ground decreases this impact.

**8591**

The building not communicates with surrounding buildings, because of the distance (about 120-125 meters from the next building). The proposed foreground with trees decreases this impact.

**8603**

The building not communicates with surrounding buildings, because of the distance (about 120-125 meters from the next building). The proposed foreground is a part of the loading area (truck traffic).

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# DIALOGUE WITH THE ENVIRONMENT

## DIALOGUE WITH THE PARK

### BÉLA NAGY

**0476**

The architectural concept and the proposed public functions (cafe, shops, terraces etc.) create living connections with the park when the museums are closed.

**2564**

It is an ingenious solution to lift up the main entrance from park and give intimacy to the ground floor areas. There are public functions (cafe, shops, terraces etc.) basically to the Zichy street, not to the green.

**3087**

Introvert building. The sculpture-like building not communicates with outside environment.

**3405**

The buildings are not communicating with outside environment, the public functions are oriented the inner streets.

**3759**

It is an ingenious solution to create a pearl necklace of different functions, but the concept allows independent use of different spaces at the same time. Public functions (cafe, shops, terraces etc.) are opened around, to the Zichy street, to the park too. One of the best solutions in submitted competitions.

**6418**

The building communicates with environment. The public functions are oriented to the main foreground opened to the Zichy street and to the park.

**8210**

The building communicates with environment. The public functions are oriented to the park and the main foreground opened to the Zichy street.

**8591**

The building communicates with environment. The public functions are oriented to the main foreground opened to the Zichy street and to the park.

**8603**

The building concept allows moderate communication with environment. The airshafts isolate the sloped mass and the facades. The „Museum Plaza“ above the garage is the main foreground of the building. The public functions are oriented to the „Museum Plaza“ or located „on the building“.

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# DIALOGUE WITH THE ENVIRONMENT

## ACCESS TO THE BUILDING

### BÉLA NAGY

**0476**

The building open to the park, to Zichy street and to Hermina street too.

**2564**

The building open to the park, to Zichy street and to Hermina street too.

**3087**

The building has connections to the park, to Zichy street and to Hermina street too.

**3405**

The building has connections to the park, to Zichy street and to Hermina street too.  
The concept of the independent cubes is paid by the visitors, because the visitors have to go down first to move up to the higher levels.

**3759**

The building has connections to the park, to Zichy street and to Hermina street too.

**6418**

The building has connections to the park, to Zichy street and to Hermina street too.

**8210**

The building has connections to the park, to Zichy street and to Hermina street too.

**8591**

The building has connections to the park, to Zichy street and to Hermina street too.

**8603**

The building has connections to the park, to Zichy street and to Hermina street too.

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# DIALOGUE WITH THE ENVIRONMENT

## ORIENTATION

### BÉLA NAGY

**0476**

The orientation of the building is one of best submissions.

**2564**

The building is accessible from each direction, but basically is oriented to the Zichy street.

**3087**

The orientation of the building is neutral.

**3405**

The orientation of the building is neutral.

**3759**

The building is accessible from each direction.

**6418**

The building primarily is oriented to the Zichy street, but there are added open-air functions around the building. It may occur problems the proximity of the loading bay to the „East terrace“.

**8210**

The building is accessible from each direction, but the main orientation is to the Zichy street and the park.

**8591**

The building is accessible from each direction, but the main orientation is to the Zichy street and the park.

**8603**

The building is accessible from each direction, but the main orientation is to the Zichy street and the park.

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# DIALOGUE WITH THE ENVIRONMENT

## PARKING AND TRANSPORTATION

### SYSTEM

#### BÉLA NAGY

**0476**

Correct solution (parking places for the staff and the visitors, organization of truck traffic, taxi drop-off, autobuses), but the ramp is outside of area to be built up („building place”)

**2564**

Correct solution (parking places for the staff and the visitors, organization of truck traffic, taxi drop-off, autobuses) with underground connections.

**3087**

Correct solution (parking places for the staff and the visitors, organization of truck traffic, taxi drop-off, autobuses), but the ramp is outside of area to be built up („building place”)

**3405**

Correct solution (parking places for the staff and the visitors, organization of truck traffic, taxi drop-off, autobuses), but the loading bay is opened to the main pedestrian access: Zichy street. It raises some problems: the frequency of the use of loading bay and the architectural solution of the Zichy street facade.

**3759**

Correct solution (parking places for the staff and the visitors, organization of truck traffic, taxi drop-off, autobuses), with underground connections. The geometry of the loading area determined.

**6418**

Correct solution (parking places for the staff and the visitors, organization of truck traffic, taxi drop-off, autobuses), but the loading bay is opened.

**8210**

The parking places for the staff and the visitors, organization of truck traffic, taxi drop-off, autobuses are solved. The parking area (visitors/staff) are located in garage under the Hermina street. The loading area is open, covered, operated with elevators.

**8591**

Correct solution (parking places for the staff and the visitors, organization of truck traffic, taxi drop-off, autobuses), but the loading bay is opened to the main pedestrian access: „loop”. It can raise some questions: what is the frequency of the use of loading bay and how to solve the Zichy street facade.

**8603**

The route of visitors through the exhibition areas is quite tricky; connections between the different galleries are assured mainly by lifts.

The artefacts route is very complicated: elevators should be used several times to access key support rooms of artefact handling (i.e. photo studios, research in storage and documentary research) and the delivery of exhibition areas requires to go through a very long ring underground corridor. Artefacts elevator opens on narrow spaces which is not convenient for artefacts handling.

A separated access for staff is provided at each level, without crossing visitors routes. But again, staff should go through the very long underground corridor all around the building to access to the different spaces.

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# DIALOGUE WITH THE ENVIRONMENT

## BICYCLE AND PEDESTRIAN ROUTES

### BÉLA NAGY

**0476**

Right solutions (pedestrian pathways to the main targets, bike path, cycle-storage), but there are no predetermined cycle paths.

**2564**

Right solution (pedestrian pathways to the main targets, bike path, cycle-storage) with defined bike connections.

**3087**

Right solutions (pedestrian pathways to the main targets, bike path), but there are no predetermined cycle storages.

**3405**

Right solutions (pedestrian pathways to the main targets, bike path), but there are no predetermined cycle storages.

**3759**

Right solutions (pedestrian pathways to the main targets, cycle-storage), but there are no predetermined cycle paths.

**6418**

Right solution (pedestrian pathways to the main targets, bike path, cycle-storage).

**8210**

Right solutions (pedestrian pathways to the main targets, bike path), but there are no predetermined cycle storages.

**8591**

Right solutions (pedestrian pathways to the main targets, bike path, cycle-storage), but pedestrian path crosses the loading bay.

**8603**

Right solutions (pedestrian pathways to the main targets, cycle-storage), but there are no predetermined cycle paths.

# ARCHITECTURE AND MASS FORMATION

## GENERAL ARCHITECTURAL IMPRESSION OF THE BUILDING, MASS PROPORTIONS

### LAJOS HARTVIG

#### 0476

The Overall Architectural Effect of the Building, Ratio of Volumes - The shaping of the building was inspired by the regular geometry of the former Iparcsarnok (Industry Hall) arranged along the historical axis and the organic flow of Városliget (City Park) interpenetrating the building.

The building may be divided into three main horizontal parts: the service level, which is hidden underground and its area is rationally organized; the traversable, partly lowered ground floor and partly elevated first floor; and the exhibition areas hidden in the floating volume.

The entrance level and the almost completely open first floor - serving as a public space - provide direct connection to and interaction with the park. This Entry, due to its gentle forms and spaces, could express the transition of the volumes of the park and the museum at the ground level in the most beautiful and sophisticated way. The building seamlessly circulates and integrates the surrounding area, and sensitively interacts with it.

The geometric volume floating above the covered area reaches over the top of the trees of the park, nevertheless, due to its form, it does not dominate the space rather it seeks interaction with it.

Uniqueness, Innovative Building Character, Exterior and Interior Appearance - The plan focuses on maximizing the area of active surfaces (public spaces, green areas): the multi-storied entrance space, and the fully utilized roof terrace and green roof provide twice as much area to the park users than it actually covers.

The façade design is rich and diverse nevertheless the volumes and spaces of exhibition areas have an inordinate visual impact. The unarrayed appearance is partly covered by a membrane with a leaf venation design, hung over the façade.

A special, outstanding characteristic feature of the building is the green roof with wild flowers, and the harmonic shaping of skylights, waterfall and roof terrace excised from the green roof, which all enhance the natural character of the building.

Spatial Relationships of the Building - Underground access to the building is misadventurously planned from the direction of the City Park promenade, nevertheless visitor and service vehicle traffic is sensibly handled separately. Transportation of goods is possible through the access route, in a limited way though, the connection of the underground parking area to the space and corridors of the museum is optimal.

The underground entrance level works well together with the lobby. The spaces and the lighting of the entrance hall are spectacular and it provides open access to visitors arriving from both the direction of the field (park) and from Hermina Street.

The exhibition areas are spacious, flexibly variable yet unified, while office space area is strictly arranged.

The coffee bar on the ground floor has no possibility to expand out towards the park, which is a disadvantage of the plan. Despite this fact, the roof terrace provides a spectacular view and experience of space.

Architectural Quality of Building Spaces - The building captivates the visitors with numerous amounts of small tricks, it is an interesting and appealing object, which not only has the capacity of attracting the audience but it can also serve as a real meeting point due to its covered public space.

“The City Park Veil” offers exciting, well elaborated spaces; its corridors and internal pathways are thoughtfully organized, and it is absolutely not exaggerated (the gross floor area of this building is one of the smallest of all Entries).

In summary, this is the strongest and the most well-thought-out concept, which by the development of a simpler façade may well be worthy of becoming a centre of the new museums of Budapest.

#### **2564**

The location and design of the building deliberately imitates the bare rationalism of a Roman fortress.

The designer brings in the regular and rectangular lines of the city structures situated at the edge of Városliget into the organic and naturally chaotic world of the park in an unduly harsh way thus deliberately trying to reorganize and control it.

This type of sharp contrast however is contradictory to the intent of the announcer and has a rather displeasing effect in the park environment.

The design is strongly centralized: the regular rectangle-shaped mass is placed at the concurrence of the two main axes. The designer justifies the utilization of straight stone walls by the existence of these strict perpendicular structures. With this emotionless act the designer severs the connection between the park and the building in many ways. Due to the structure of the terrain, out the three main stories, two upper levels are visible from afar.

Apart from the stone walls, cutting through the landscape the external view is dominated by emphatic cantilevers sprawling above the ground.

#### **3087**

Like a tree stump left in the ground, so this building stands among the trees of Városliget, yet it also has an effect of a split mass, like an obscure oversized rock with crack-like entrances at opposite ends.

The axis of the Park rends the Trunk in two, but if one observes the layout it looks as if four different persons cut it from four directions, as if the wings of the building were to come apart along the cracks.

An inactive volcano, a log, a rock, a termite mound, a tent, a curtain... the visual effect of the building raises similar associations but perhaps due to its disproportion and size it does not intend to be building-like on purpose.

Its overall effect is obscure, and volume shaping of the building is faulty.

### **3405**

The museum consists of four standalone towers which are connected only by the underground structures. This idea creates a hybrid space in between the volumes, which allows the natural areas of the park winding into the built spaces of the museum.

The building blocks, which serve four different functions, are organized around a central area along the historical axis - crossing the square "Ötvenhatosok Tere" - of the park. An interesting symbiosis is created between nature and architecture as park areas provide the background for the pavilion-like blocks and as the built masses enframe the sight of the trees of the park.

On the plateau elevated from Nagyrét vegetation breaks in between the buildings by strict, geometrically shaped garden segments adjusted to the building line, which perfectly underlines the obvious purpose of blurring the barrier between the external and internal spaces.

### **3759**

The designer's intent was the open enlargement of the city park, which s/he tried to achieve by the floating forms of freely-shaped terraces and canopies. The designer intends to blur the barrier between the built and the natural environment by the scattered positioning of the slabs, which imitate leaves fallen from a tree. The mass of the building tries to imitate the silhouette of the trees of the park by the curved lines of the terraces and ramps.

The open ground floor areas and the moderately inclining terraces facilitate the access of the visitors of the museum from all directions.

Nevertheless, the building has an extremely disordered overall impact, which, as opposed to the general atmosphere of the park seems rather chaotic. Visitors may hardly be able to find the entrance of the building, or if they found one, it would be unlikely to find that specific entrance, which leads to their planned destination.

### **6418**

The basic concept of the plan is to utilize the features of the park to the maximum possible level. The building does not want to stick out from the park; it moderately follows the line of the trees of the park. The rectangular volume is raised a little bit from its surroundings like a gentle hill, but then it flows back smoothly. The arch is formed by an array of domes, which are like conoidal frustums. This not only defines the relationship of the building with its surroundings, but it has a great role in the development of inner space structure.

The line of the roof and the tower of the offices follow the silhouette of the foliage. It serves a sign with a special character, but it also provides an unobtrusive background for the natural environment.

Nevertheless the characteristic lining up of conoidal frustums is visually surprising and odd in the middle of the park. Regardless of the efforts of the designer, it is still a rather strange sight among the trees.

### **8210**

Concept of the building is derived from the dual function of a contemporary museum: on one hand it is a quiet place of contemplation, on the other hand it is a public meeting place. Therefore accessible and inaccessible features saturate the two museums both on the physical and on the ideological level.

The geometry of the roof created by stressed strands takes the form of a hyperbolic paraboloid, which is connected to the inaccessible and symbolic level.

Placing the two museums into a single building creates the possibility of interaction, which is derived from their status and their intellectual reserves. The designer places the elements of the two museums (both inside and outside) into separate zones. At the connections of the museums the designer introduces intelligent filtering zones, which are to be made alive by various functions. Functions related to everyday life, meeting areas and places for social interaction (e.g. coffee-bar, auditoriums) are located on the lower floors while functions related to deep thinking, contemplation and representation of symbolic values (GAIA) are accommodated in the upper level.

### **8591**

The central theme of the Entry is “repaying to the city”. It aims at creating a sustainable arrangement; practicability takes precedence over the form, however this concept is violated by the actual architectural design.

The roof is inclining towards the square of “56-osok”, which is an attempt of integrating the building into the park. This attempt is also enhanced by the environmentally sensitive, veil-like façade development (the columns reflect to the park). One of the greatest merits of the building is the structure and shaping of the roof, which allows the park to grow onto the building, and facilitates the placement of museum functions into the park.

The shape of the building blends into the park, yet it places a substantive mass into the natural environment. Its façade is continuously changing and one walks around it, yet it does not appear to be closed from any directions.

### **8603**

The roof, inclining towards the park is suitable for attracting visitors from the Napozórét, but the volume of the building is monumental; the pyramid shape looks strange in both the natural and in the built environment, it cannot be linked to anything.

The highest point of building is 40 metres above the ground, which is way above the foliage; it cannot be integrated with the park, and cannot become an attractive sight.

The main façade is constructed of a puddle wall fixed to the reinforced concrete frame. The chosen materials indicate that the design aims at getting close to visitors, however the form and size of the building make it look strange and oversized.

# ARCHITECTURE AND MASS FORMATION

## UNIQUE, INNOVATIVE EXTERNAL AND INTERNAL APPEARANCE, CHARACTER OF THE BUILDING

### LAJOS HARTVIG

#### 0476

The plan focuses on maximizing the area of active surfaces (public spaces, green areas): the multi-storied entrance space, and the fully utilized roof terrace and green roof provide twice as much area to the park users than it actually covers.

The façade design is rich and diverse nevertheless the volumes and spaces of exhibition areas have an inordinate visual impact. The unarrayed appearance is partly covered by a membrane with a leaf venation design, hung over the façade.

A special, outstanding characteristic feature of the building is the green roof with wild flowers, and the harmonic shaping of skylights, waterfall and roof terrace excised from the green roof, which all enhance the natural character of the building.

#### 2564

The façade and shaping of the building is austere, the design omits fashionable solutions and follows a strict pattern.

The purpose of the design is to create a timeless and functional building, which simply provides the necessary spaces, but the enclosed and reserved style and the unpleasantly enormous size of the building looks strange in the park environment.

The design is modest and simple due to the chosen materials. The transparent glass ceramics and marble finishing is very aesthetic, a perfect choice for neutral museum spaces.

#### 3087

The design of the building focuses on the interaction of the freely shaped external shell, and the rational inner structure inspired by nature. The outline though is recklessly made and the rectangular inner system fails to arrange the composition in proper order.

The glazed and concrete façade is covered by an indefinable perforated screen, a drapery blown by the wind which creates a somewhat exciting visual effect and compensates for the unfortunate shape of the building.

#### 3405

Character and volume of the towers are determined by their clear function. The north western block holds the exhibitions of the Hungarian National Gallery, while the

LUMU is located in the diagonally opposite block. Offices and administrative functions and GAIA Laboratory are located in the two smaller towers. The cross-shaped space between the buildings has a pleasant atmosphere; the coffee-bars can perfectly utilize the area and have the potential for the establishment of inner terraces.

The surrounding natural environment is playfully reflected on the façade. The external surface is articulated by evenly spaced variable width aluminium lamellas. The wider stripes located in the lower part of the building resemble the thick drape of the underwood while the width of the lamellas is decreasing towards the top of the building allowing for the glazed surfaces to appear, which clearly reflect the lights of the sky shining through the foliage.

### **3759**

The building character tries to be spectacular, but this can hardly be interpreted, the building is not composed well; unfortunately the design lacks the expressionism and character of the similar but higher-standard works of Deconstructivism. It is hard to find the order in the system of the confused play of ramps and vertical surfaces, which may seem scary to visitors.

Selection of materials is moderate; the building utilizes simple and natural materials. The visible concrete slabs and shells, the sparkling glazed surfaces and the finished aluminium surface of the coverage are all modestly prepared in a warm light grey colour, which emphasizes the character of the intensive form-toolset of the design.

Starting from the four corners of the building, moderately inclining ramps lead up to the upper level areas of the museum, providing an alternate access route to visitors. These external entrances are impossible to control. First time visitors would definitely be having a hard time understanding these routes, which are autotelic.

### **6418**

The white glazed ceramic covering of the domes is supposed to emphasize the unobtrusive and neutral character of the building. However the domes look like as if they were made of plastic, which looks sadly out of place in the green landscape. It is hard to interpret the colours of the entrance side, which resembles a snake's skin. It is unnecessary, and just simply disturbs the overall effect.

The transparent glazing of the portal façade organically connects the public functions, which are accommodated in the building, to the external pathways of the park. The ratio and height of the perforated surfaces seem a bit compressed under the robust roof structure.

The orientation, shape and forming of the space in front of the entrance is well planned, it shows the location of the main entrance to visitors arriving from Zichy street. Due to the choice of materials and to the elaboration (or rather the lack of elaboration) of the details the building fails to have an attractive and friendly effect. Due to the structure of the floor plan the building cannot have any direct connection to Napozórét.

**8210**

The concept built upon the “Duality of permanence and change” is well represented by the design of the building in the structure and finishing and in the area of its space organization.

The shell around the inner core is formed by the transparent and flexible acoustic veil limiting and at the same time joining the various spaces; the external shell is a semi-transparent ceramic glass.

The vertical structure consists of hardened concrete shear walls, while the roof is made of rope-framed steel beams. The structure of Ludwig Museum is made up of diagonally placed, reinforced concrete beams and reinforced concrete wall consoles which provide great flexibility in the arrangement of exhibitions. In the National Gallery arrangement of spaces follows the classical enfilade which underlines the importance of permanent and lasting values. Here the structure is strict and traditional.

**8591**

The building has no rear façade: it connects the park with the northern districts from the direction of Hermina street and it also integrates natural landscape into the built forms.

Exhibition areas, seats, and skylights are placed smartly on the roof, in a well-thought-out manner. Its selection of materials is “tectonic”; it utilizes glass and ceramic finishing in the areas accessible by the visitors.

It has a determined concept: to emphasize the differences between the two museums, yet by bringing them into one building it also aims at unifying them. Ludwig Museum is more open, it has several terraces; the National Gallery follows a house-in-a-house arrangement, it has a more enclosed and introverted style.

The spaces of GAIA are located on the highest point of the building; it is especially elevated and esteemed by having a scenic terrace.

**8603**

The roof intends to be an integral part of the park; it has suitable finishing (concrete, and stone), which also makes it accessible by foot.

It becomes an active public area due to the coffee-bars, and the terraces and it provides an excellent view for visitors.

The razor-like, reinforced concrete beams of the roof follow the main slope of the terrain; apart from creating an inclined surface they also function as a shade. Sustainability is highlighted by solar panels, which can perfectly utilize the possibilities arising from the shape of the building.

The roof adapts well to the natural and soft differences of the terrain.

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# ARCHITECTURE AND MASS FORMATION

## SPACE RELATIONS OF THE BUILDING

### LAJOS HARTVIG

#### **0476**

Underground access to the building is misadventurously planned from the direction of the City Park promenade, nevertheless visitor and service vehicle traffic is sensibly handled separately. Transportation of goods is possible through the access route, in a limited way though, the connection of the underground parking area to the space and corridors of the museum is optimal.

The underground entrance level works well together with the lobby. The spaces and the lighting of the entrance hall are spectacular and it provides open access to visitors arriving from both the direction of the field (park) and from Hermina Street.

The exhibition areas are spacious, flexibly variable yet unified, while office space area is strictly arranged.

The coffee bar on the ground floor has no possibility to expand out towards the park, which is a disadvantage of the plan. Despite this fact, the roof terrace provides a spectacular view and experience of space.

#### **2564**

In line with tender requirements the visitor and service access is provided through an underpass, possibly from Hermina Street. Transportation and loading/unloading of pieces of art, as well as visitor and staff traffic is mixed in a single underground space, which is an unfortunate solution. Logistics of cargo handling is not planned, and visitors cannot access the museum directly from the garage, only from outside.

The area of the museum is spread throughout the three main levels. The two lower levels may be accessed through the ground level entrances. Access of the building from Hermina Street is difficult.

Following the archaic central pattern a three-storey high statue and atrium is positioned in the centre of the building with glazing areas above that provide an infusion of natural light. Exhibition areas are organized around the central atrium.

The main entrance of the third level may be accessed from one direction by a long ramp organized along the main axis, nevertheless there is no over emphasized lobby in it. The space of the third level is not definitely limited; it flows into the exhibition area.

The shop, coffee-bar and restaurant are placed on the right spot, near the main entrance, unfortunately though, their relationship with the park is still indirect.

The museum spaces are wide and traversable but their arrangement and development is incidental; the service, office and educational areas are scattered to the edges of the building and are located in four different blocks.

The layout of these four blocks is rational and clearly organized, but the access routes to the blocks are ambiguous, badly designed. In short, they are located only in

the basement therefore circulation cores must be multiplied; there is no lobby in the blocks, and communication across the exhibition areas is very problematic.

### **3087**

As opposed to tender requirements, cargo transport, and visitor and staff traffic are directed under the building from the Városliget promenade. The long cargo underpass is undeveloped and the underground loading and unloading area is too extravagant.

The building may be accessed from four directions, the secondary side-entrances are perpendicular to the main axis and they are oversized. It would have been better if the designer had focussed on the main axis.

The vertical circulation cores are rationally placed; on the ground floor the access routes and corridors are large, and even wastefully wide and too branched at some places, some exhibition areas of the ground floor are detached and placed far away from the reception and the information desk and access to these areas are provided without any lobbies.

Placing the coffee-bar and restaurant near the entrance at the south-western side is a good solution; it creates a direct link with the City Park, which is completely in line with the intention of the announcer.

The placement of the exhibition areas is inconsistent, regardless of the freely adjustable layout structures. Periodic exhibitions are located on the ground floor and on the first floor as well; the area of the National Gallery reaches into the wing of Ludwig Museum. Arrangement of exhibition areas is subjective, regular floor-plan and amorphous space are interchanging; there are many dead ends, the route of visitors is erratic. Administrative offices, GAIA Lab and the roof terrace are located on the top floor. The roof terrace has exceptional potentials, which were unfortunately not developed.

### **3405**

Visitor traffic is led into the underground guest hall by two elegant and wide flights of stairs along the main axis of the park. Despite the generous design of the Concept, this hall happens to be rather narrow. The two museum gift shops lost their direct external connections.

The pair of stairways located in the two museum wings provides alternate routes through the exhibitions when going upwards or downwards. This is a clever solution for evading the trap hidden in the concept, namely that museum blocks and pathways could become a bag-like dead end. The two loop-like routes converge in the underground foyer, thus the whole building may be accessed and walked through continuously.

Education and meeting auditoriums are located on the top floor. This seemingly particular solution is justified by the spectacular view from above, which creates a much pleasant microclimate than an underground placement would.

The only thing against the concept of the four standalone towers is the lack of a more direct relationship between offices and the exhibition areas. For example, museum employees working in the upstairs offices may only access GAIA Laboratory through the underground floor.

Channelling passenger vehicles via Zichy Street deeply into the City Park is contrary to the tender, and a faulty solution. As opposed to this, the loading/unloading route for cargo traffic is clearly organized, and it is visually separated from the passenger visitor traffic on the ground floor of the GAIA building.

### **3759**

The central atrium can be accessed from three sides. The main entrances on the ground floor are retracted and are hard to find in the jungle of ramps and canopies. The vast, multi-storey space of the distribution hall is protruded by the cubes of the exhibition areas and their connecting set of ramps which form an unusual composition.

The permanent exhibition halls may be accessed from two different routes. The first route leads through the exhibition areas, and follows a time based sequence as it leads through the objects of various ages. The second route leads through external, scenic terraces and resting areas. Visitors - just like in the park - can choose which path to follow in the museum. Visitor pathways however are expressly confused, and do not facilitate continuous walk-through. At certain locations there are quite surprising solutions like Room No. 8., which is like a dead end and can be accessed through a 30 m long ascending corridor, or like the ramp leading to Room No. 11., which reaches the exhibition area by touching the corner of a coffee-bar upstairs and then leading through the kitchen.

The event halls cannot be accessed directly, only through a terrace, from the exhibition area or from the library so they are practically useless.

The area of the New National Gallery and LUMU can hardly be separated due to the messed-up visitor routes.

Access of visitor parking area could not be identified from the drawings. Bicycle storage opens from the internal service corridor. The underground path for cargo vehicles is extremely narrow; it is questionable whether it could be suitable for use.

### **6418**

The inner, functional arrangement of the building is extremely clean, it is almost flawlessly organized. The museum may be divided into three, well separable vertical blocks. The entrance block holds the shops and coffee-bars on the ground floor. These are open towards the square and require direct, active external connections as well. On the northern side the tower building of office workers is located, while GAIA Laboratory is placed on the southern side. Both units are standalone, fit for their intended purpose, well separated, and can be accessed directly.

The middle block is the actual museum itself. Exhibition areas are organized around a stairway surrounded by an extremely spacious cloister. The atrium is airy, and well-arranged; the visitor's route is logical and easy to be followed. The exhibition rooms are interconnected with each other and with the cloister as well. The exhibitions may be walked through in various ways, which is clearly indicated in the guideline. The elements of the National Gallery and LUMU are separated on different floors; they can be reached independently from the staircase or they can be accessed successively from the museums themselves.

The rear block serves as a place for storing handling and treating of pieces. The service and visitor access routes are functionally separated; the paths are not crossing each other.

Accessing the parking area from Zichy street is contrary to the tender requirements, and it is a bad solution. Nevertheless the parking area is wide and well organized. Loading and unloading may be carried out perfectly through the northern side, hidden and separated from visitor traffic.

### **8210**

The designer places and orientates the building according to the existing promenades and roads and paths of the park. The aim is to allow park life to “flow” through the building. A closed rear façade towards Hermina street however is created where reception, loading and unloading of pieces of art are handled, in a rather narrow space.

Parking area is situated under Hermina street in an underground garage (810 parking spaces on three sub-levels). Widening of Hermina street is planned in the necessary measure. This solution narrows the necessity of placing other functions underground, but excludes the possibility of entering the museum directly from the garage.

The building opens towards the Nagyrét with a spectacular entrance hall, however main entrances are located on the two sides. Coming from the direction of the park visitors may buy tickets on the ground floor and access the stairway of the National Gallery leading to the permanent exhibition without going through reception.

Arrangement of spaces on the upper levels is in line with the concept: connections are fixed, there is little room for unique spatial relationships, but the area is perfectly suitable for the accommodation of the planned functions.

### **8591**

The Spatial Relationships of the Building are double sided. On one hand, the space organization of Ludwig Museum is innovative, flexible and it communicates very actively with the roof area facing the park, accessible by visitors. On the other hand, arranging the National Gallery into a box structure is pointless; it creates a rambling inner space, and both functionality and aesthetics are harmed.

The two buildings are joined along a strong axis, which wedges into the entrances from the park side and from Hermina street. When arriving from the park, visitors must walk down a corridor to the main entrance to buy tickets. This degrades the only entrance from the direction of the park to a secondary, “back-door”.

Visitor parking area is placed under the entrance hall. Safety of the pieces of arts is ensured, but the ramp of the underground garage is misplaced to Városligeti boulevard, where visitor traffic should not be allowed. Cargo transport and loading/unloading of objects is arranged from the direction of Zichy Mihály street, entrance for staff members is placed on the opposite side.

The roof serves as an area of intensive communication between the building and the park.

**8603**

The main communicational tool of the building is the roof, which reaches onto the level of the park and serves as a natural amphitheatre, as an “eye” on Budapest.

The shaping of inner space is not so successful. The elevators travelling from the underground garage are placed on the external façade. The foyer of the auditoriums located on the ground floor is not large enough, and indirect access of the halls from the foyer is not ideal. Administrative rooms are located on the Hermina street wing of the building, which may be accessed by corridors and pathways which are of the same width, and look the same as the design of the main corridors for visitors.

Access of visitor and staff parking area is arranged from Hermina street in an underground garage, which is situated below the main entrance of the building and spread through 3 sub terrain levels. The ramps connecting the levels of the parking area would be hard to utilize.

# ARCHITECTURE AND MASS FORMATION

## ARCHITECTURAL QUALITY OF SPACES

### LAJOS HARTVIG

#### **0476**

The Overall Architectural Effect of the Building, Ratio of Volumes - The shaping of the building was inspired by the regular geometry of the former Iparcsarnok (Industry Hall) arranged along the historical axis and the organic flow of Városliget (City Park) interpenetrating the building.

The building may be divided into three main horizontal parts: the service level, which is hidden underground and its area is rationally organized; the traversable, partly lowered ground floor and partly elevated first floor; and the exhibition areas hidden in the floating volume.

The entrance level and the almost completely open first floor - serving as a public space - provide direct connection to and interaction with the park. This Entry, due to its gentle forms and spaces, could express the transition of the volumes of the park and the museum at the ground level in the most beautiful and sophisticated way. The building seamlessly circulates and integrates the surrounding area, and sensitively interacts with it.

The geometric volume floating above the covered area reaches over the top of the trees of the park, nevertheless, due to its form, it does not dominate the space rather it seeks interaction with it.

Uniqueness, Innovative Building Character, Exterior and Interior Appearance - The plan focuses on maximizing the area of active surfaces (public spaces, green areas): the multi-storied entrance space, and the fully utilized roof terrace and green roof provide twice as much area to the park users than it actually covers.

The façade design is rich and diverse nevertheless the volumes and spaces of exhibition areas have an inordinate visual impact. The unarrayed appearance is partly covered by a membrane with a leaf venation design, hung over the façade.

A special, outstanding characteristic feature of the building is the green roof with wild flowers, and the harmonic shaping of skylights, waterfall and roof terrace excised from the green roof, which all enhance the natural character of the building.

Spatial Relationships of the Building - Underground access to the building is misadventurously planned from the direction of the City Park promenade, nevertheless visitor and service vehicle traffic is sensibly handled separately. Transportation of goods is possible through the access route, in a limited way though, the connection of the underground parking area to the space and corridors of the museum is optimal.

The underground entrance level works well together with the lobby. The spaces and the lighting of the entrance hall are spectacular and it provides open access to visitors arriving from both the direction of the field (park) and from Hermina Street.

The exhibition areas are spacious, flexibly variable yet unified, while office space area is strictly arranged.

The coffee bar on the ground floor has no possibility to expand out towards the park, which is a disadvantage of the plan. Despite this fact, the roof terrace provides a spectacular view and experience of space.

Architectural Quality of Building Spaces - The building captivates the visitors with numerous amounts of small tricks, it is an interesting and appealing object, which not only has the capacity of attracting the audience but it can also serve as a real meeting point due to its covered public space.

“The City Park Veil” offers exciting, well elaborated spaces; its corridors and internal pathways are thoughtfully organized, and it is absolutely not exaggerated (the gross floor area of this building is one of the smallest of all Entries).

In summary, this is the strongest and the most well-thought-out concept, which by the development of a simpler façade may well be worthy of becoming a centre of the new museums of Budapest.

#### **2564**

The character and spatial organization of the building is traditional; apart from the mere exhibition of objects it does not attempt to provide interactivity, to offer a “museum experience”, which is a basic requirement for museums in the 21st century.

Regardless of the seemingly clean perpendicular design the visitor will not see any generous architectural solutions apart from the central atrium; the choice of materials is undoubtedly stylish, yet one could easily be dwarfed by the high and stern spaces. It is very characteristic to the plan that people are seldom pictured on the perspective renderings.

#### **3087**

Though the screen hides this mysterious object growing from the ground it also separates it from its environment. Despite its organic façade-structure this building stands out in the middle of the park like an odd and alien formation. The narrow, crack-like entrances do not seem inviting, thus the museum will hardly be able to fulfil its visitor-attracting role.

Inside the exterior shell, the inner scheme and space structure is not well planned.

#### **3405**

The building follows a simple geometrical system. The clear architectural structure creates unobstructed, airy spaces. The empty spaces spanning large distances may be arranged and furnished in line with the specific programme of the exhibition or functional requirements. The space of the multi-storey high sculpture exhibition hall established under the office block is lit from above. This solution enhances the exhibition of objects and facilitates the proper illumination of work spaces.

Placement of skylight tubes at the footing of the towers is a very useful solution, and suits the concept very well because it allows perfect daylighting of underground rooms,

which in essence creates a much friendlier atmosphere and can ease the burden of museum staff working in the underground stores and restoring halls.

Due to the nature of the 4 towers the specific area of access routes and corridors is large. All wings have their own circulation cores.

### **3759**

Museum spaces are aligned along a rectangular but rotated-axis coordinate system. Terraces and ramps are connected to these masses of cubes in a playfully shifted way.

Exhibition spaces have large floor area. Due to the structural raster of 12m x 16m the volumes can be spaced well, exhibition areas are suitable to host any type of exhibitions. It is unfortunate that these exhibition areas cannot really work together as a whole, due to their random connections and the oddities of the access routes.

Accessing the offices is hard. Segmentation of the office block can hardly be carried out due to the structure of the layout. Most of the area is poorly illuminated, and does not comply with the basic requirements of a 21st century work environment.

### **6418**

The cross-shaped internal pathway functionally and visually integrates and organizes the exhibition spaces. The designer integrated the wide cloister with the exhibition spaces.

The symmetrical, joint entrance halls of the auditoriums on the basement level are narrow. Given the prospective number of visitors, they will only provide limited capability for hosting the audience.

The domes have a very strong organizing effect on the upper levels, and thus indirectly to the lower ones as well. Artificial lighting is applied in the exhibition halls of the Gallery, located on the ground floor, which require a more traditional background, while the exhibition area of the contemporary LUMU is illuminated by the sunlight through the domes. This natural light can enhance dramatically the effect of the exhibited pieces.

Due to the structure of the roof and the geometric layout flexibility of large exhibition areas can only be provided in a limited way, aligned to the geometric arrangement of the building.

Technological (e.g. water proofing and drainage) issues arising from the special roof structure have been thoroughly detailed and planned for by the designer.

### **8210**

The concept has a strong character, and it is extremely strict, which results in clean architectural forms, yet it also incorporates a great deal of restrictions. The two institutions are joined: the National Gallery is classically suited on the outside, and it is placed in the crust-zone, while Ludwig Museum is located in the inner core of the building and it is designed with contemporary structures and great flexibility, representing constant change.

Independent access of the spaces of GAIA is not possible; the placement of GAIA in the external crust-zone is contrary to the tender requirement as this location does not reflect its sacral and innovative features.

The arrangement of the space of the National Gallery is very fixed. The external appearance of the building is quite strict; the simplicity of the form is not attractive. This rigid and stern look is loosed by the utilization of transparent finishing which can partly reflect the surrounding environment and by the emphasis placed on the underground open spaces and on the large, stretching canopy, which reflects the inner core.

### **8591**

The design unites two different institutions by focusing on their similarities. A smart concept is devised for highlighting differences, which on the other hand unfortunately fails to create a successive space structure.

The building sits atop of a rebuilt hill, and seamlessly blends into the natural environment.

The applicant separates the two institutions along a historical axis, and builds them on the same foundation. The two main entrances are connected with a corridor on the ground floor, aligned along the main axis. The corridor is unfortunately narrowed down by the vertical circulation core coming from the underground garage, and it also has a level difference issue.

The box-like arrangement of the National Gallery can hardly be integrated with the smooth, wavy external lining of the building and it creates segregated spaces. The event hall of the National Gallery has no foyer, and some offices in the upper room have no natural illumination.

Service functions are packed in-between in an unorganized way. The relationship between the boxes and between the corridors of the exhibition area creates an efflux of space, which on the other hand seems as if it were accidental and random.

The strength and wit of the concept is not realized on the floorplans.

### **8603**

The foyer on the ground floor is generous, but oversized. Orientation of the coffee-bar is good; it can serve both the external area of the terrace and the internal reception area as well.

The large exhibition areas of the permanent exhibitions placed on level -2 can be flexibly modified, but their arrangement is not well planned, visitors randomly find themselves in the middle of the square. The placement and number of planned restrooms are not logical.

The seasonal exhibition areas planned on level 2 may only be reached through the circulation core of the respective museums; accessing the other museum on level 2 is not possible.

Spacious corridors surround the service areas on the upper levels due to the chopped volumes of the building, which is not utilized by the organization of space. Natural lighting of offices is provided by terraces leading onto the roof.

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# TECHNOLOGY AND FUNCTION

## VISITOR'S EXPERIENCE

### LORD

**0476**

The project is structured around outdoor covered plazas giving access to the main entrance hall and public spaces like NNG event areas and café.

Exhibition galleries are located on the upper levels (one for NNG galleries, one for LM galleries).

A double level rooftop is provided, including LM event areas and café, the Gaia Lab, and a spacious garden.

Thanks to the plaza, the building allows continuity of views from and towards the park; light wells offer spectacular view points from a level to another.

The entrance hall is well organized and gives easy orientation to the visitor. Exhibition spaces are also clearly structured.

Escalators allow reducing the use of elevators and contribute to keep the continuity of the visit experience.

All the other public areas are judiciously located and provide good interfaces with the surroundings (views from the rooftop, access to the park etc.).

For the visitor comfort, toilets are located on each floor.

**2564**

The project aims to develop a quite simple architecture, in order to put in foreground the collections housed within both museums. The main path (i.e. exhibition spaces and others public areas like event halls) is organized around a central courtyard housing the sculptures atrium, and making the connection between LM and NNG permanent exhibition.

Public functions and offices are located on the sides of the building, like small pavilions. Although globally efficient, the whole spaces are quite austere and rather monotonous.

No particular views are provided on the park and the surroundings; outdoor spaces could be more developed.

We also note a lack of relax places along the visitor main path.

No toilets are provided on the 2nd floor, within the exhibition area.

**3087**

The project aims to explore the limits between architecture and landscape, playing with the contrast between an organic shaped façade and more rational spaces inside.

Both museums are organized around a common vertical central hall, which is quite impressive, and refers to Buda and Pest thus keeping a certain distinction between the two institutions.

Although attractive from the outdoor spaces, the façade becomes anecdotal within the exhibition galleries. The control of natural light being the main concern of the project, exhibition spaces don't offer any strategic view on the park.

Only one toilets block is provided on each level.

However, a café and a terrace are provided on the rooftop; the location of the events areas and others public spaces on the groundfloor level allows good interfaces with the park.

### **3405**

The project proposes a split building made of four blocks, linked by a common basement level. The outdoor spaces between the blocks aim to create a welcoming area, mixing architecture and landscape. The design follows the masterplan of the park, with a main axis coming from the great meadow.

Although the entrance hall main functions (ticketing, cloakrooms etc.) are clearly located, the general organization of the visitor path is quite confusing: spaces are fragmented on different floors and /or split in several blocks. As a result, the visitor has to go through many staircases or elevators, which breaks the continuity of both the visit and the museum experience.

The underground floor provides some dead end spaces both within the galleries spaces and the entrance hall.

The outdoor spaces in between the four blocks are not enough designed and quite poor in terms of experience.

Toilets are provided only on second basement (entrance hall level), which is not enough.

No relax spaces are proposed along the visitor path.

### **3759**

The project aims to propose a whole experience by offering a building accessible from all sides. This creates particular links between exhibition rooms, outside areas and the urban surroundings. The building is made of 'boxes' that house one or several functions and work independently. Each exhibition area is connected to an external terrace and sometimes to other public spaces like café, working as a rest place.

Thus, two main routes are proposed to the visitor: one inside, through the galleries, following a chronological path; another one outside, along the external terraces.

Most of the public spaces are strategically located to provide as much as possible interfaces with the park. Outdoor spaces are especially designed to ensure the best level of comfort regarding the wind, the sun etc. The building aims to become this way entirely accessible (indoor and outdoor spaces, roofs etc.), making visitors really active in the museum experience.

For the visitor comfort, toilets are provided on each level.

Although interesting, the concept developed for the routes generates difficulties both for access control and orientation inside the galleries, particularly in the upper levels. Slopes aim to keep continuity for walking but may be physically rude for some people and non accessible for disabled visitors.

However, the architectural concept - system of independent ,boxes' linked by slopes or other vertical circulations - provides enough flexibility to improve those points (see the Functional contacts and Transport systems sections).

### 6418

The project proposes a very rational organization, spaces are displayed around a dramatic central staircase and patio, providing indirect natural light in the whole building. Tiled colored façades reflect the surrounding landscape and create a target point for the visitor coming from the great meadow.

The regular and repetitive shapes of the roof, as architectural gesture, symbolize the unity of the institutions and, following the canopy line, aim to create a landscape experience within the park.

The rational organization of spaces combined with the merging of some functional areas like event halls, learning areas etc. provide a very clear building, where visitor and staff can easily walk through.

However, the museum experience is quite poor:

- although impressive, both the central staircase and the long patio don't offer so much experience;
- except the sculpture garden, outdoor spaces are not developed enough;
- interior spaces offer few interfaces with the external environment;
- exhibition galleries provide repetitive rooms;
- most of the Museum learning areas and event areas are located on the underground levels, with no direct natural light and no view on the surroundings.

### 8210

The project offers a quite good visitor experience, developing an interesting interaction between the two institutions: the NNG, as a ,crust outer zone', provides an historic frame, while the LM works as an ,inner zone'.

The visitor has this way the possibility to move freely between the permanent exhibition areas of the two institutions at each level, through the ,filter zone', working both as a connection and a separation area.

The main hall provides an impressive design: from the entrance, the visitor can enjoy the skylight and has an overview of the different levels of the building.

Within the galleries, the use of wood for floor finishing conveys a natural feel and atmosphere.

However, toilets and cloakrooms are located on the basement, without direct access for disabled people.

More, no particular solution is provided for relax spaces within the exhibition areas.

Regarding the integration of the building in the city park, we note that the main accesses are located on the north-eastern and north-western side of the building, without taking into account the pedestrian promenade on the historical axis. Stairs and lack of slopes reduce disabled people accessibility to the outdoor areas.

**8591**

The organic shape of the museum reacting with the park could be an interesting concept, as well as the idea of splitting and connecting the building in two parts along the historical axis. In this sense, the reception area should be a continuation of the promenade of the park, giving access to both institutions. However, despite interesting visual contacts and glimpses between interior and exterior environment, no clear orientation is provided in the whole building and the exhibition route is fragmented on several levels. There is a lack of hierarchy amongst the several accesses to the 'central spine', which results quite confusing.

The location of pedagogical spaces and event areas close to the façades, as a means of interaction between the museum and the community, could be a very interesting solution, but actually generates strange fit outs of these venues (i.e. inconvenient shape of event hall on the ground floor).

The roof is accessible to visitors and equipped with seating and informal exhibition spaces, giving access to terraces with views on the park and the city. However, circulations on the roof should be clarified, especially for disabled people.

Concerning comfort facilities, toilets are provided at each level. Break-out spaces are located within the corridors of the NNG exhibition area, but are not especially designed and developed in terms of visit experience.

**8603**

The building consists in a monolithic block of rammed earth, aiming to create an architectural landmark (rising up to 40 m height) and providing views on the city from its accessible roof. The historical axis is only considered for a shape issue (block split in two parts), while main entrances are located on the north-eastern and north-western sides of the building site.

Although the rooftop concept is interesting, the building seems out of scale within the City Park and its surroundings. Its massive architecture makes the building appear more than a closed and 'introverted' place rather than an open social place.

Once passed the very impressive and suggestive entrance hall, the visitor goes through the exhibition galleries, with few interfaces with both outdoor spaces and other public areas (most of the galleries are located on the underground floors).

The roof path is quite monotonous and reveals arduous in terms of visit experience (both for disabled and non-disabled people).

For the comfort of visitors, toilets are provided on each level, while breakout spaces are integrated only within NNG temporary galleries.

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# TECHNOLOGY AND FUNCTION

## VISITOR'S EXPERIENCE

### MNG

**0476**

The building can be reached by visitors from several access points. The information counter and the ticket office can be immediately seen from each entry point.

It might be somewhat confusing for visitors that from a chronological perspective the permanent exhibition of the National Gallery should be followed by the exhibition of the Ludwig Museum, however, the levels are situated in the opposite order: the exhibition spaces of the Ludwig Museum occupy the second floor, and those of the National Gallery - which should come first both chronologically and in regard to the route mapped out for visitors - are on the third floor. This problem can be solved by appropriate visitor control. As regards the permanent exhibition spaces, it is problematic that after reaching the floor, either by lifts or escalators, visitors arrive in a rather narrow lobby, and in the case of a large crowd there is no space to accommodate the waiting visitors. There is a similar difficulty if visitors need to wait to get into the temporary exhibition, as the corridor connecting the atrium and the exhibition space is too narrow.

The permeable Elevated Plaza of the first floor is an exciting idea, also the oval skylights and terraces (especially the roof terrace) add a great extent to the visitor experience. The waterfall inside the building and the UHTP cover light-shadow also emphasize the unique character of the building.

**2564**

The building's structure is not at all significant neither from the outside, nor from the inside. It does not provide any unique experience for the visitor.

**3087**

The building can be reached by visitors from four access points. The mass of the building delineated by a metal covering is broken in the middle in a cross shape by a roof-lit atrium. The incoming light will map out and accentuate the main visitor routes as well as the access to the service facilities. The information counter and the ticket office are located at the centre of the building in a well-noticeable way. There is no contact with the natural environment except for the central, naturally-lit hall, therefore the visitor will feel as if inside a closed shell. An exception is the rooftop terrace café, however for example there is no possibility left for outside vending for the ground floor brasserie.

**3405**

It is a strong point of the design that the opportunity to set up catering units with an option to operate outdoors is provided both on the ground floor of the Gaia building and on the ground floor of the diagonally located office building.

**3759**

The entrance hall can be reached from several access points along paths fitted with ramps. Walking on sloping paths provides an exciting spatial experience but might pose problems in regard to visitor orientation. All in all, the playful design of the building creates exciting spatial experiences, although it creates confusion for visitors as to the route they should follow.

**6418**

The only entrance for visitors to the building opens from Zichy Mihály út, which is not the most suitable solution. The building only connects (communicates) with the park on its ground level and thus visitors will only meet natural light on the first two floors. Hard to understand why the restaurant is not able to open towards the Park (Napozórét).

**8210**

The ground floor area of the building is bordered by a glass wall, thus making an exciting connection with the natural environment. Both the restaurant and café has the possibility to operate outside the building which is favorable. However the visitor has no other visual contact with the park on any other level of the building.

**8591**

The architectural design concept does not distinguish between the front and the back of the building, as the museums can be accessed both from the park and the Városligeti körút. However, visitors arriving from the direction of the park might find it problematic that all the service points (information counter, ticket office, cloakroom, audio guide, museum shops) open from the other side, so visitors entering the building from the park can only access them by walking along a long narrow corridor ending in a flight of stairs. Those reaching the building from the Városligeti körút step into a light, spacious entrance hall and will find their way around the service points without any difficulty. However, they can only access both the temporary exhibition of the National Gallery and one of the permanent exhibitions of the Ludwig Museum along the long narrow corridor. Provided by the building's design include the option provided for the catering units to move outdoors, offering an impressive panorama from the roof terrace, as well as the exciting spatial experiences created by the perforated roof.

**8603**

Visitors can reach the entrance hall from more than one direction. Thanks to the openings in the ceiling, which lend the building its unique character, the entrance hall is bathed in natural light. The separation of the two institutions i.e. the Ludwig Museum and the National Gallery - is very well structured. Visitor orientation is clearly facilitated by the entrance hall and the services being shared by the two institutions, while they each have their own entrance inside the building.

The geometric openings in the ceiling result in an exciting space-experience. The possibility to walk on its outside and the spectacular panoramic view are also unique.

At the same time, it is a great advantage that the cafe and the brassiere have a direct connection to the park, enabling their outdoor use.

# TECHNOLOGY AND FUNCTION

## VISITOR'S EXPERIENCE

### LUDWIG MUSEUM

#### 0476

Despite of the intention to connect the museum with the city park, the architectural form itself doesn't carry this message. Ludwig Museum and National Gallery are not separated visually. The exhibition spaces are not much variable, and aren't fascinating at all.

#### 2564

The rational, classical modernist style building with walls and calm gardens assure a balanced environment for visitors. Large-scale exhibition halls can be divided many ways. Using of daylight makes exhibition rooms pleasant. However, Ludwig Museum is situated in the lower story, which creates a submissive position.

#### 3087

The connection with the surroundings are very limited, but the light and spacious atrium gives a nice perspective for the visitors. Unfortunately, the organic-like shape of the museum creates a hardly usable walls (or windows) in exhibition rooms, as well as a solid and quite heavy block in the park, which can be depressing.

#### 3405

The four separated buildings are helping in orientation and try to reduce the huge volume of the architectural program. The space in between helps to connect the buildings with the surrounding nature. The foyer can accommodate well the visitors. The shape and the position of the exhibition rooms are not clear and are hardly understandable for the public (for example: permanent exhibition, surrounded by the temporary exhibition room, big, L-shape temporary rooms, the position of the graphics cabinets etc.).

The position of the library is not ideal (underground floor).

#### 3759

According to the architect's intention, the building works as the extension of the city park, and creates a constantly shifting relationship with the surrounding, which helps to connect people with the cultural matters of the museums. Using terraces creates a well-usable, but maybe a bit complicated architectural order, with alternate paths (galleries, social, terraces).

The separated permanent exhibition rooms help the public in reception (not too large modules, no disorientation). The public spaces in between reflect both the exhibitions inside and the nature outside. The building can be used after closing hours, too, as there are more entries for special events and shopping from outside.

**6418**

The building has a very unique form and structure, which can be interesting, but also surprising for the public, as well as the color façade. A clear structure inside the building helps the visitors' easy orientation. There are different types of exhibition rooms, which basically follow a classical museum order. The architectural program reflects on the didactic, educational function of a museum. Temporary exhibitions people doesn't feel comfortable, according to our experiences.

The museum plaza and educational functions are located in the first zone, the exhibitions in the second, vertically separated from the back of the house.

**8210**

The design solution (placing Ludwig Museum inside the building of National Gallery, a "house in the house") is very unique, but problematic for an "invisible" museum inside. The dual system (historical, traditional frame outside, contemporary, flexible rooms inside) is attractive, but brings also disadvantages at the so called "filter zones", when the aim is to separate, not to connect exhibitions (noise, light etc.). Frequent use of acoustic veils can be problematic, too.

According to the shape of the building, the different rooms are often too long (National Gallery).

**8591**

The open, transparent, round-shape, dual building of the two institutions has a contemporary message, and suggests a model of a "borderless" museum, which serves the public on a high level. People can follow the activities inside already from the park, they can orientate in the central zone, and can enjoy the exhibitions and other services separately in the two institutions. The public roof provides a calm rest place and a good outlook on the park and the city.

The diversity and flexibility of the gallery spaces helps curators in installing and the public to enjoy exhibitions, which works very well in the National Gallery wing. However, the "vineyard" system of Ludwig exhibitions is not ideal: diverse exhibitions and public programs can be hardly separated, if necessary (the collection contains a lot of traditional works as well, not only large scale installations).

**8603**

The main attraction of the building is the large, open, public roof, "an open, democratic agora". The very special architecture can be attractive, but maybe also deterrent for people, who are get used to the more historical, traditional mood of the Liget. The shape creates a special architectural order, where the bigger spaces in the lower levels, smaller on the top levels, and lot of rooms have beveled roof, which creates sometimes a problematic spatial situation inside. According to this determination, permanent exhibitions are located on -2 and -3 level, with a visual connection to the upper floors, which is not an ideal. Events are organized on the ground floor, education and learning on upper floors. The two institutions are spatially separated.

# TECHNOLOGY AND FUNCTION

## VISITOR'S EXPERIENCE

### MÁRTON HORN

#### 0476

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor, interaction and communication

2. Integration

Grouping together of service functions, linking different entities, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget)

3. Interoperability

In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration

4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values

5. Functionality- regarding the social possibilities

This building has a great connection with the park, and the public with its organic visitor paths from both ways, which continues on in the park as promenades. It makes it strongly attracting, and transparent. It is interoperable with its inside plaza where we find many visitor functions (shops, information, cinematic etc.) opening from the big community place. This area is also very flexible to handle possible changes, and development in this topic later.

The two museums are well integrated with each other, so it is easy to connect the functions, and the exhibitions. The plans respect the park well thanks to the low coverage on the ground floor (more underground and above). The well organized entrances, and inside ways makes the routes for the visitors are simple, and easy to find. The idea of the rainfall can be attractive, but also can be too much, and makes the outside area not welcoming (noise, dirty water?).

The great roof terrace and the green rooftop a bit too detached from the public, and harder to reach, but all functions are quite well organized regarding the visitor point of view. The building is not a really good selling point with its style, visuals and probably would not be much of an iconic building for the new Museum Park project.

#### 2564

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor

## 2. Integration

Grouping together of service functions, linking different entities, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget)

## 3. Interoperability

In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration

4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values

5. Functionality- regarding the social possibilities

Not too well developed project, a lot of questions are unanswered. It is a moderated, nature respected plan, but with many problems regarding visitor experiences.

First, the building is very much divided from its surrounding, thanks to the wall and museum garden around it. The aim of the Liget Project is to build a new brand through integration of the different elements. Dividing the museum from the other parts of Liget, is not a good message, the museum programs should be the part of the daily leisure time, and connect one to the other.

The interior design with the marble facing raises problems regarding the public opinion. The recent National Gallery in the castle has similar design elements arising many problems such as unpopular "socialist design" ...etc.

The inside structure is quite conservative, there are not much of socializing possibilities, no open community places. The shops and the coffee bar are not connected to the park.

The museums are vertically divided not supporting the interoperability which might arise further problems regarding all the added services also; for example in case of the two bookstores and cafeterias. The community areas are not functional, too small, not flexible, nor transparent. These plans are not reflecting an emblematic, characteristic building which would find/attract a welcoming audience.

Overall the main problems of this plan are the lack of integrity and social aspects.

## 3087

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor, interaction and communication

## 2. Integration

Grouping together of service functions, linking different entities, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget), orientation

## 3. Interoperability

In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration

4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values

## 5. Functionality- regarding the social possibilities

Not too well developed project, a lot of questions are unanswered. It is a moderated, nature respected plan, but with many problems regarding visitor experiences.

This museum concept can be well communicated, the public would like this project expectedly. However the question is that how much 'future-proof' it is. The image of the building (Budapest from above, and the special metal cover) in a short time could lose its attractiveness towards the audience.

Concerning the social use possibilities, the path way through the building nicely connects the museum to the outside; the new public "piazza" connects the different community activities (shop, ticketing, cafeteria etc.) with the museum exhibition places. It creates a good in-between space to the two institutions.

While the main hall divides the two museums, at the same time it nicely connects them with the different public services. I was wondering why the rooftop is not used for any visitor function, if it has been 'cut' to a plain surface.

Altogether this project is a user friendly idea, with a question of timelessness.

### 3405

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor, interaction and communication

2. Integration

Grouping together of service functions, linking different entities, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget), orientation

3. Interoperability

In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration

4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values

5. Functionality- regarding the social possibilities

This entry gives a feeling of a concept setting a Museum Quarter within a Museum Quarter. It is nicely grouping together the buildings underground, and gives a community quarter on the top. The two museums are also connected, and can present exhibitions linked together, or gives possibility to use the whole area on one topic. Above the ground the orientation is still manageable thanks to the important functions next to each other (eg. entrances, catering etc.).

The inner spaces finely brings together the park and the vision of museums in a non drastic way. The plans bring up the feeling of a cultural campus in a park, with its house like pavilions, which is good regarding integration.

Overall this project finds some good solutions regarding visitor experience, especially in the idea of the linking the different entities together in a user friendly way. But altogether it still gives the feeling to build a small 'city' within the park without giving

any good solution to the appearance as an attraction, especially for the foreign visitors, which is one of the essential questions of the Liget project.

In addition it is also important to mention here, that the previous selected two cube like buildings didn't find the way towards the heart of the local public either.

### 3759

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor, interaction and communication

2. Integration

Grouping together of service functions, linking different entities, orientation, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget)

3. Interoperability

In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration

4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values

5. Functionality- regarding the social possibilities

Flexible Building, brings together the park and the museum regarding visitor's use. It might be the most open and interoperable building out of the entries. From every side, there is a possible way to enter, and the mall inside facilitates different functions as in a shopping area. While this is an advantage, at the same time, it is a disadvantage of the building too. The freedom of involvement makes hard to understand the building, and gives the feeling that it is not easy to find your way, and not sure why some of the spots needed for.

Still some good ideas can attract the visitors and could create new and flexible usage for them, as the hanging roofs outside. The so-called slope path shows how much the plan is willing to integrate the different leisure activities to the museum. While the visitor attending the exhibitions, they have several possibilities to enter or exit from/to these public programs.

The building overall is very transparent, and focuses on the strong connections with the surroundings. It gives good experiences to the visitors besides visiting the exhibition. It is kind of a community center, with some connection problems between some elements.

### 6418

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor, communication and interactions

2. Integration

Grouping together of service functions, linking different entities, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget)

### 3. Interoperability

In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration

4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values

5. Functionality- regarding the social possibilities

The forms and shapes are well integrated into its surroundings, with their increasingly growing heights. The mixture of some aspects in design is trying to suit the old tradition of the Liget, but it might give the feeling of the 70's architectural forms of Hungary in the local opinions.

The connections to the leisure activities are possible, but not perfect, especially not with the only one, main entrance, and the closed façade toward the main meadow. There is no real connection between the cultural and recreational activities.

There are not any attractive but useful instruments which helps the visitor experience (terrace, open air event-exhibition place etc.)

The two museums are strongly integrated in the one building, which in some ways helps the visitors (transparency, and the continuousness of the visitor experience),but is questioning the identity of the two museums on the other side.

The building looks airy, but with its 40m height and 150m width could reflect a monumental feeling towards the park.

## 8210

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor, interaction and communication

### 2. Integration

Grouping together of service functions, linking different entities, orientation, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget)

### 3. Interoperability

In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration

4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values

5. Functionality- regarding the social possibilities

The project creates an interesting connection within the two museum spaces (one within the other), which helps the exhibitions to be connected, and creates a good orientation for the visitors. The NNG with its classical arrangement frames, the new flexible spaces of LUMU, which is good for the visitors to able to find and understand the historical connections between the different artistic periods. It could raise questions regarding operation, but for the visitors is not problematic.

The ground floor altogether is a hospitality area, which meant to be very transparent and flexible for the visitors, although some more functional integration would have been good here too as in the exhibition spaces. It could be a better connection of the coffee shops, caterings or bringing a common child area to the ground floor, connected to the park. The idea of using so-called filter zones to divide the different museum areas is a good choice to have the time for the visitor to relax; also, I really like the way of organizing special places to open discussion towards the public, as the exhibition boxes do on the ground floor.

The entry did focus on visitor's experiences, and find some good, and interesting solution to connect the different tasks in, and around the building. It handles the people not only as direct museum visitors, but as the users of a social atmosphere. The building is willing to create communication between the museums and the Liget as a unity, which is an aim to be able to build up a complex visitor's experience in this new museum park. The application mentions, that the duty is not just creating a functionally good building, but an architectural artifact having a special artistic merit. "To attract the attention of the people with a building stands out of the ordinary." I believe in that way this building is not ready in Hungary..

### **8591**

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor
2. Integration  
Grouping together of service functions, linking different entities, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget)
3. Interoperability  
In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration
4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values
5. Functionality- regarding the social possibilities

The entry takes care of the surroundings; especially interesting how it wishes to gather the people, and helps them to find their way to the plinth running around the building, also the concept trying to connect itself with the whole Museum Park. The idea of the plan is to have a strong relation with the park as many ways as possible. On the ground floor, all the functions are situated to have a possibility to interact with the outside (event halls, catering possibilities, shops, kids learning); in that way the building gets special arms to attract people from the park. The orientation is also well organized in the entire building.

The switch alike building creates a great terrace with a great view over the city, and a possibility to have a view into the museum to entice the possible new visitors. The

multifunctional roof with its different possibilities (views, seatings, exhibition spots) also a good idea to increase visitor interests.

The two museums have its own autonomous side in the building, but the connection possibilities still exist to get great exhibitions together. They connect primary through the non-gallery functions as the hospitality, retail or the arcade and passage which can brings the people through the building.

Altogether I can say that the building is strongly respecting the mentioned visitor experiences, especially regarding the social use, and user friendly environment, or the routes of the visitors. Only a few problem could be mentioned (e.g. the shops are too devided from the public).

### 8603

I set 5 main visitor experience principles and compare the different entries regarding that.

1. Personal & social Individual involvement, personality of the institution, customisation, personal use, communal and social use possibilities, user friendly atmosphere, contact with the visitor, interaction and communication

2. Integration

Grouping together of service functions, linking different entities, orientation, overlapping (in both services and content). How much it reflects, links the two museums, the different places of the new Museum Quarter (Liget), orientation

3. Interoperability

In-between spaces, contact with the park, interior spaces, accessibility programs, transparency, purposes, inspiration

4. Brand factor- public opinion, acceptability from the public, new image for the city, creating new values

5. Functionality- regarding the social possibilities

The main message and attraction of the building towards the visitors are the viable roofs, which opens a new area for all park visitors. It is an extension of the big meadow, and also the setting back of it to the original size. It is a great gesture, and opens good visitor's experiences. It is also a message that everyone welcomed around the museum, they are not just the temple of arts anymore. You can use it as a community meeting point, and the museum building can help to bring art closer to the people.

The mass of the building is quite extensive, at the same time it is possible to create a new meeting and viewing point with that, a spectacle which kind of places have been the part of the history of the park at the last century. It would still reases the question how the public will react, but I believe for the visitors this would be a great experience to be involved in.

The building is quite open-minded with the inside and outside public and hospitality spaces too. The so-called Museum plaza is nicely connected to the park, but would be good to see some artistic, or community possibilities here too (installation, seats or café). The orientation are also well figured with the entrances, but should be a direct contact from the park too (there is a dead end direction inside to that way..), and that is missing. Also the catering's connection with the parks should be stronger.

The inner plaza helps to solve the arrivals from different directions, and gives a nice hospitality functions with its shops, and seatings. It is interoperable, and connects the two museums together visually and functionally too, with keeping their autonomy. This project also helps to functions not only as a museum but a community place, although it would need to solve some functionality problems.

At least I need to mention that this building could stand as an emblematic building of the new museum quarter, and in that way touristically also would help the project, and the city too.

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# TECHNOLOGY AND FUNCTION

## MUSEUM TECHNOLOGY SOLUTIONS

### LORD

#### **0476**

CH can't be checked in the design drawings; however, the note indicates 5,5 m in the main galleries, 4,5 m in the Shrine and the Graphic Cabinets, thus complying with the brief requirements.

Exhibition galleries are designed with a large span structure (for instance 20 m for the LM), providing spaces which are largely free of columns, thus allowing flexibility as well as many type of exhibition displays.

Flexibility is also guaranteed by multiple accesses to the temporary galleries that allows easy partitions of the spaces.

Reinforced concrete slabs and engineered steel trusses at cantilever location are used to deal with load bearing issues.

Both the Shrine and the Graphic Cabinets are equipped with light lock to control natural light.

The façades are made with high solar performance glazing; within the galleries spaces, there are only few openings. This helps control natural light. However, the project provides some strategic views on the park.

Solar shading has been incorporated to control glare, excess solar gains and peak cooling demand, as well as to protect the transparent elements from direct solar incidence. LED technology is proposed for the artificial lighting.

Buffer zones are located around the exhibition galleries in order to reduce the impact of air movement within all the public areas.

Dedicated MEP, AV, IT, electrical & security closets are included within each core to serve the respective galleries.

However, those two points should be detailed in the design drawings.

#### **2564**

The project provides standard but efficient solutions regarding museum technology:

- free-of-columns spaces allowing various types of exhibition displays;
- modular systems that facilitate gallery rehangs;
- LED technology for artificial lighting;
- heating and cooling systems through the ceiling voids within the galleries spaces;
- power boxes grid on the galleries floor.

However, some of the exhibition spaces located at the second floor (ie: oval shape rooms) are not easily usable for exhibition displays, particularly for paintings. Solutions for load bearing solution and control of natural light should be precised.

**3087**

If the general organization of the galleries guarantees flexibility for exhibition displays, no details are provided regarding museum technology solutions, except the façade solid panels to eliminate natural light within the exhibition spaces. For this criterion, design documents are unsatisfactory.

We also note that:

- the artefacts handling corridor is only 4 m high, instead of 4.5 m as required in the brief;
- Photo studios (LM and NNG), Research spaces in storage rooms (LM and NNG) and Graphics research areas have no natural light.

**3405**

If the general organization of the galleries guarantees flexibility for exhibition displays, no details are provided regarding museum technology solutions, except the façade solid panels to eliminate natural light within the exhibition spaces. For this criterion, design documents are unsatisfactory.

We also note that:

- the artefacts handling corridor is only 4 m high, instead of 4.5 m as required in the brief;
- Photo studios (LM and NNG), Research spaces in storage rooms (LM and NNG) and Graphics research areas have no natural light.

**3759**

Within the exhibition galleries, the large span structure (12x16 m) provides enough free of column spaces to ensure flexibility of use and potential for further exhibition design developments.

Galleries CH meet the brief requirements: either 5.5 or 8 m, except in the gallery 8 (NNG permanent exhibition gallery), which is only 4.5 m height.

Some spaces located below slopes are not easily usable and / or convenient: for instance the LM lecture hall which has very low ceiling or some support spaces to event areas, with narrow and long volumes, or the Research Space.

However, those points could be dealt with by moving vertically some of the ,boxes', and thus modifying the slopes and other vertical circulations. Although tricky, it seems that the architecture of the building is flexible enough to allow improvements.

Galleries interior walls, as well as the ceilings, are clad with plasterboard for easy maintenance. The note proposes concrete flooring that could be interesting in terms of resistance to art movements or maintenance.

Climate control within the galleries is ensured by both wall and ceiling plenum (heating, cooling and air supply).

Control of natural light and artificial lighting system should be precised.

#### **6418**

Regarding the lighting, the project meets the brief requirements:

- controlled natural lighting for both the NGG and LM permanent exhibition spaces;
- no natural light for the temporary exhibition spaces of both museums;
- controlled LED light sources;
- indirect natural light is also provided from the main central staircase.

However, the skylight devices should be detailed especially about the possible parametrical adjustments of the sides and the slopes of the 'sky domes'.

The note mentions movable partition walls for the exhibition galleries, but no detail is provided. Indeed, the current organization combined to the structural grid generates fragmented spaces which is quite an issue for further exhibition design developments. Furthermore, it doesn't allow a good distribution of areas within the temporary exhibition galleries.

Some of the galleries floors can be partially removed in order to create double height volumes. We have hesitation on this point, which should be precised for the next steps (lack of drawings showing the flexibility of volumes).

Standard reinforced concrete flat slabs are provided for the galleries located on the underground level but precisions should be given about the load-bearing capacity of those floors, especially for the sculptures atrium.

Regarding the climate control, an underfloor heating is provided, as well as a ventilation through the opened skylights (operating at night during the warm weather). This point should be precised, especially concerning artworks conservation.

#### **8210**

The choice of textile veils as a partitioning system for the exhibition areas, although poetic and aesthetic is quite an issue for climate control, fire safety, acoustic performance and maintenance.

The double layered façades aim to work as a buffer zone to ensure the climate and the lighting control; however, this device should be precised, particularly for the south façade (possible issue for artefacts conservation).

Skylight is controlled through a double layer shading system on the roof.

The NNG permanent exhibition area is organized as a sequence of rooms (enfilade) reminding the atmosphere of classical museums; but those fixed 'white boxes' actually

represent more of a constraint rather than a resource to development variety of exhibition displays.

Nevertheless, the cabinets located within the hollow RC wall structure, that can open towards both sides (NNG exhibition rooms or filter zones) and equipped with multimedia solutions and film boxes, constitute an interesting solution to provide more intimate exhibition spaces.

Regarding the LM exhibition areas, only the 4th floor provides free of column space (temporary exhibition gallery). Other levels are organized around a 12 per 6 meters grid structure, that is not so much flexible, even though it ensures a performing efficient load bearing solution.

No information about artificial lighting is provided.

Flexibility of floors and ceiling is quite good, with raised floor for the LM permanent exhibition areas, and parquet and false ceiling for the NNG permanent exhibition areas. However, this point should be developed for the next stages.

### **8591**

In the NNG galleries ,black boxes' overlap each other on three different levels, with no natural light, as required. However, no detailed information is provided about artificial lighting.

The LM galleries are organized on three levels, like ,flowing terraces'. Climate control could be there an issue, because those open exhibition spaces constitute one single big volume. Again, no information is provided about artificial lighting. Furthermore, no precise solution is developed for natural lighting through wide glazing surfaces of the façades (sidelighting), whose control is actually an issue.

A lack of optimisation of structures within the galleries should be noticed: the use of several structural systems generates narrow spaces constraining a flexible fit-out of the galleries (i.e. concrete columns and other boxes/rooms - video room, artefact elevators, etc. - in LM exhibition areas).

The slope roof seems to generate several spaces with CH under 5,5 m within the exhibition galleries, even though this point couldn't be precisely checked with the provided drawing documents.

### **8603**

Thanks to the large span structural grid (12 m), the exhibition spaces provide good flexibility. However, some residual spaces are to be noticed and no detailed information is provided about partition devices within the galleries.

As required, there is no natural light within the galleries.

LED technologies are used for artificial lighting.

Nevertheless, we are concerned about the use of tensile fabric for the ceilings: even if it could solve acoustic issues within the galleries, this device could be itself an issue to integrate artificial lighting system. No detail is given regarding this point.

The idea of locating the galleries and archives in less climatically sensitive spaces is quite good, even though standard solutions are provided for AC mechanical systems for artefacts care and the exhibition spaces offer no views on the park.

Concerning floor finishes, solid wood is employed for permanent exhibition and NNG temporary exhibition, while polished concrete is employed in LM temporary exhibition. Concrete flooring could be an issue for flexibility: details should be given regarding power supply grids within the galleries.

# TECHNOLOGY AND FUNCTION

## MUSEUM TECHNOLOGY SOLUTIONS

### MNG

#### 0476

The architectural form of the building and preliminary sketches of the mechanical engineering- and building electricity leave possibility for a subsequent specification of definite solutions of museum-technology. Definition of these will become relevant at a latter phase of planning. According to these, e.g. the inner height of the exhibition spaces is adequate and also filtering out natural light from the exhibitions is well thought after.

#### 2564

The architectural form of the building and preliminary sketches of the mechanical engineering- and building electricity leave possibility for a subsequent specification of definite solutions of museum-technology. Definition of these will become relevant at a latter phase of planning.

#### 3087

Technical description is superficial, thus neither the mechanical engineering-, nor electrical, nor other proposed solutions of museum technology are to be found. Therefore merely the architectural set-up of the building can serve to provide some basis for future technological systems of the Museum building.

The amorphous lines of the walls of the exhibition area create a captivating spatial experience; however, it is highly problematic from the perspective of exhibition organisation. Natural light is filtered out due to the covering metal wall In the case of exhibition spaces.

#### 3405

The architectural form of the building and preliminary sketches of the mechanical engineering- and building electricity leave possibility for a subsequent specification of definite solutions of museum-technology. Definition of these will become relevant at a latter phase of planning. However in the case of the exhibition spaces, filtering of natural light by the outer vertical aluminium structure is not accommodating.

#### 3759

The architectural form of the building and preliminary sketches of the mechanical engineering- and building electricity leave possibility for a subsequent specification of definite solutions of museum-technology. Definition of these will become relevant at a latter phase of planning.

The proportional set-up of the building's spaces and solid parts make it possible for the resulting blocks to control their natural light according to their functions' necessity.

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Natural light can be excluded from the exhibition spaces, at the same time it can be assured to the right level on corridors, at offices and museum education spaces.

**6418**

The special roof lighting system which regulates the incoming natural light in the permanent exhibition space of the Ludwig Museum on the first level is an interesting museum technological solution. The layout of the exhibition spaces is clear, flexible and ideal for exhibition organisation.

**8210**

The 'filter zone' between the outer and inner exhibition zones has major disadvantages: the 'acoustic veil' separating the core from the outer zone takes up useful wall surfaces; it provides no protection against the inconvenience caused by the dust and noise during the reinstallation of exhibitions, which is also detrimental from the point of view of artefact protection. Another significant disadvantage is due to the fact that the big open air spaces make it impossible to control climate and humidity according to artifact security standards.

**8591**

The proposed temperature control system of exhibition spaces is not favourable neither from the viewpoint of artefact security nor from that of exhibition organization as the ventilation spots of the system are placed on walls or the floors. Neither artefacts, nor certain kind of installations are to be placed near these spots, thus use of the space becomes too limited. Control of light and filtering of natural light seems thought after in the case of the National Gallery, however it does not seem to be ensured in the case of the Ludwig Museum.

**8603**

The compact form of the building ensures that the exterior surfaces (envelope) is kept to a minimum.

Well orientated glazed surfaces act as a passive solar design solution, the external shading can prevent unnecessary solar gains.

The proposal includes on-site renewable energy (integrated PVs), partly well orientated, i.e. south facing.

The thermal mass of rammed earth and concrete as primary materials together with the optimised glazing contribute to the adapting to climate change (avoid overheating).

The proposal is considered exceptional from energy perspective.

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# TECHNOLOGY AND FUNCTION

## MUSEUM TECHNOLOGY SOLUTIONS

### LUDWIG MUSEUM

**0476**

The rooms for artifact handling are planned like they are open from the artifact storage, which is an absolute mistake.

**2564**

The coffered ceiling, the ventilation system, the lighting conform the standards. Handling of artifacts is well separated from other background activities.

**3087**

Museum technology details are not explained in the plan.

**3405**

The planned technologies serve the conservation of the artworks and match the requirements.

The artifact and other storages also match the requirements, but are not separated for the two institutions. The position of the workshops isn't good (too close to the artifact handling).

**3759**

The exhibition rooms are equipped with the necessary lighting and climate systems. The grid system helps the curators to plan different exhibition displays.

The artifact storage next to the heating machinery is not a good position (common wall).

**6418**

The grand central staircase (with artifacts) can cause climatic and security problems. Using of controlled daylight and artificial LED light matches the requirements.

**8210**

The solutions are not specified in the plan in detail, but it refers to the requested standards.

The light courts (filter zones) can cause climatic and security problems in the building.

**8591**

The big glass surfaces and open spaces can create problematic climatic and safety situations.

**8603**

The architectural form of the building and preliminary sketches of the mechanical engineering- and building electricity leave possibility for a subsequent specification of definite solutions of museum-technology. Definition of these will become relevant at a latter phase of planning. According to these, e.g. the inner height of the exhibition spaces is adequate and also filtering out natural light from the exhibitions is well thought after.

The openings between different levels make it possible to look down onto underground spaces from above, thus creating an exciting visitor's (and architectural) experience. The visually brave solutions lift visitor-experience, however it raises museum-technological concerns making it impossible to separate air blocks (air conditioning will be ineffective). On the other hand the installation works of new exhibitions will result in hardly separable dust- and noise pollution of other areas. The problem however can be solved by installing glass layers between the different areas.

# TECHNOLOGY AND FUNCTION

## FUNCTIONAL CONTACTS

### LORD

#### 0476

The organization of exhibition galleries is quite satisfactory. Dedicated stairs are provided to ensure direct connexion between the NNG and the LM permanent exhibition spaces.

Events areas, Museum Learning areas, Cafés are located in such a way that they can work independently from the other spaces of the building.

However, the NNG shop access should be improved: no direct access from outside is planned today.

The artefacts handling areas should be reviewed: all venues are accessible exclusively through the temporary storage department, for both museums. This generates important issues for artefacts transport (see the transport systems section).

LM research room has no natural light.

The project provides an extra of 730-sqm exhibition surface ( 400 sqm for NNG permanent exhibition, 200 sqm for NNG temporary exhibition, 100 sqm for LM permanent exhibition).

#### 2564

Despite the simplicity of the plan, we underscore several issues regarding the functional adjacencies:

- the limits of the exhibition galleries are not clear and should be precised;
- the ‚sculptures visual store‘ (sculptures visible storage) is only accessible through the NNG temporary exhibition galleries, and have no direct connection with the entrance area, as requested;
- the Cinematheque is only accessible through the permanent exhibition galleries;
- the Video room, combined with the IT multimedia room, has no clear fit out;
- the NNG research rooms are only accessible through the temporary exhibition areas, complexifying artefacts deliveries;
- both museum learning spaces are accessible via secondary accesses, not clearly visible from the main entrance;
- for both museums, events areas can easily work independently, but a ticketing or at least a welcoming / information space will be needed;
- LM café is accessible only through the LM museum shop;
- NNG shops are not accessible from the reception area.

An important lack of surface areas has to be noticed for the NNG: -717 sqm for the permanent exhibition, while 126 sqm extra surfaces areas are provided for the temporary exhibition.

### 3087

The connexion between the LM and the NNG permanent exhibition is possible on both the first and the second floors. However, this solution does not create a clear loop circuit and this way may be confusing for the visitors.

The location of both the Videoroom and the Cinematheque doesn't meet the brief requirements: the Video room should be located between the temporary and the permanent LM exhibition galleries, while the Cinematheque should be accessed directly from the main entrance hall.

Only one toilets block is directly accessible from the main entrance hall.

Cafés and event areas are well located, for both museums, and this way, those spaces can work independently from other public areas, with their own opening time. However, event support spaces and storages are located on the basement level, and can't be directly accessed through dedicated lifts and stairs.

We note a lack of exhibition surface areas for both NNG permanent (-500 sqm) and temporary galleries (-300 sqm), while the LM offers an extra area of 350 sqm for the permanent exhibition.

In general terms, the distribution of spaces within the artefacts handling zone is not optimal: the global surface area is quite correct, but a detailed analysis reveals a lack for some strategic rooms of both NNG and LM (NNG temporary storage department -100 sqm, LM research room -50 sqm).

We also note a lack of surface areas for the other shops to let and relative storage (-65 sqm), as well as for the Gaia Lab (-68 sqm)

### 3405

The split organization of the building combined to an underground main entrance is quite constraining:

- the connexion between NNG and LM permanent exhibition spaces is possible only via the main entrance hall or the sculpture gallery, which is separated from the rest of the NNG permanent exhibition;
- Cafés have independent accesses, from outside, but shops and event areas can only be accessed from the main entrance hall;
- direct interfaces between the different public areas are limited.

The NNG library (separated from the Learning area), the Cinematheque as well as the Video room location don't meet the brief requirements.

The project provides extra surface areas of 271 sqm for the NNG permanent exhibition, 395 sqm for the NNG temporary exhibition, as well as 323 sqm for the LM temporary exhibition.

However, we emphasize the lack of surfaces areas for the other shops to let (-65 sqm), the NNG Even hall (-102 sqm), the LM Lecture hall (-82 sqm) and cloakrooms (-50 sqm).

### **3759**

The general organization of public spaces makes the functioning of both museums complicated.

Connections between exhibition areas and others public spaces should be particularly improved in order to make the architectural concept working; several locations should be revised:

- shops are only accessible through the reception area, not from outside;
- some of the cafés support spaces (kitchen etc.) have no direct connexion to deliveries and are strangely located;
- the Cinematheque is not connected to the reception area, although accessible from outside, with its own foyer and toilets;
- the Video room is located within a permanent exhibition hall, not directly accessible from temporary exhibition;
- the GAIA hall is only accessible from outside while there is no direct access to the GAIA lab, except passing through GAIA offices; GAIA storage is located within the GAIA hall, with no direct connection to the working space;
- LM photo studio has no natural lighting;
- NNG photo studio location on 1st floor is not ideal.

We emphasize the lack of exhibition surface areas: 324 sqm for the NNG permanent exhibition; 250 sqm for the LM permanent exhibition, 150 sqm for the LM temporary exhibition.

### **6418**

All the exhibition spaces are organized around the central stairs - called 'Articulation gallery' - that ensures the continuity of the museum experience as well as the connexion between LM and NNG permanent exhibition.

Both temporary exhibition galleries are located on the same level, allowing to organize one single big exhibition.

Other public spaces such as cafés, shops, event halls, are easily accessible, from the main entrance hall and /or from outside, thus allowing public access after museum openings hours.

However, access to temporary galleries should be improved: the galleries are mainly accessed through the central stairs which also houses the NNG permanent exhibition. Secondary accesses are provided but should be detailed in order to create a completely independent access to the temporary areas.

The Cinematheque is quite far from the reception area, the Video Room has no direct connection with the exhibition areas, as well as the NNG Research spaces.

The Photo Studio, located on level 1, has no direct access to the artefact handling zone.

Some spaces of the NGG and LM are combined (for instance event halls) or sometimes shared (for instance some storages). This is a good option to optimize and rationalize the spaces, on the other hand it reduces the independence of each institutions.

The main issue is about the exhibitions areas; surfaces areas indicated in the drawings don't match the space list, and there is an important lack of surface: -2039 sqm for the NNG permanent exhibition, -754 sqm for the NNG temporary exhibition.

Nevertheless, the project provides extra areas of 402 sqm for LM temporary exhibitions.

### **8210**

The concept of the 'inner' and the 'outer' zones is quite constraining for both the LM and NNG event areas:

- the location of the Event halls in the core of the building reduces the possibility to access those spaces beyond the normal opening Museums hours;
- the Event support spaces (i.e. storages, changing rooms, water blocks) are located in the basement, not close to the event and lecture halls, which is not convenient;
- the cloakrooms are located within permanent exhibition areas, while catering facilities are not directly connected with the kitchen of the F&B areas.

Both the Cinematheque and Video room locations don't meet the brief requirements (located on the basement close to visitor facilities ie: toilets and cloakrooms).

The fit out of Gaia Lab spaces should be clarified: particularly, the connection between the Gaia hall and the other spaces.

If the 'filter area' provides a good interface between the two institutions on exhibition levels, there are problems in terms of functional adjacencies on the ground floor (reception, event and exhibition) and on the 4th floor (Gaia Lab):

- the Gaia Lab access is not clearly separated from the other public spaces;
- No separated access for staff is provided for the research exhibition space (actually located within the permanent exhibition on the ground floor), with difficult connections to temporary and permanent exhibitions.

Within the reception area, the F&B and shops areas are quite well organized, with direct access from outside.

The project provides extra surface areas for both LM and NNG exhibition galleries: 281 sqm for NNG permanent exhibition, 360 sqm for the NNG temporary exhibition, 510 sqm for the LM temporary exhibition.

Gaia Lab offices lack of 66 sqm.

**8591**

Generally, an incoherent and chaotic disposition of functions within the building can be noticed, with weak functional contacts between the different spatial units:

- Exhibition areas are split on several levels, with difficulties in controlling accesses (min. 6 checkpoints should be provided on ground floor). No good functional contacts between some key venues (i.e. the research exhibition space is not well connected to all exhibition areas of NNG, no natural lighting is provided and it has not a dedicated access for experts and researchers);
- No good fit out of the artefact handling areas, mixing staff service premises and artefact handling rooms and integrating some exhibition areas (i.e. graphics cabinet of NNG temporary exhibition);
- Shops have no independent entrances from outside and their storages are located on the basement with artefact handling premises (i.e. NNG and other shops to let);
- Event areas could not work beyond from Museum opening hours; their venues are located on several levels and are not directly accessible from outside (i.e. lecture halls and other rooms of LM within the exhibition galleries);
- NNG Museum learning has a strange fit out and service rooms are not close to its main venues (i.e. toilets and storages).

The connection between LM and NNG permanent exhibitions is assured at each level through relax spaces.

We note a lack of 100 sqm within GAIA premises.

**8603**

Despite a quite good organization of the entrance hall with separated foyers for the event areas, there are several functioning issues:

- the accessibility to event areas should be improved and clarified, both for visitor orientation and uses outside Museum opening hours. The fit out of its service rooms should be significantly improved (i.e. catering, storages, etc.);
- shops are not directly accessible from outside and can be delivered only through the reception hall;
- the Research space is not connected with the permanent exhibition NNG and could be delivered only through NNG temporary halls;
- the Shrine is only accessible through the Research space;
- the Video Room is located within LM temporary exhibition, not directly accessible from the LM permanent exhibition;
- artefact handling venues are split on three levels. As a result, the LM photo studio (level 7.00m) is not ideally located, while the NNG photo studio is not provided with natural lighting (level -14.00m).

At this stage, there is no connection between the NNG and the LM permanent exhibition.

The project provides extra areas of 1000 sqm for the reception hall (the double of the required surface), while the exhibition area lacks 200 sqm.

# TECHNOLOGY AND FUNCTION

## FUNCTIONAL CONTACTS

### MNG

#### 0476

The museum shops, the cloakroom, the other service points (audio guide, storage boxes) and the elevators taking visitors up to the upper levels open from the entrance hall and they are easily noticeable. However one of the most spectacular attractions of the building - the roof terrace - remains unused without any specified function.

The lift used for the delivery of artefacts arrives directly at the exhibition area, which is far from being ideal from the point of view of security and exhibition organisation.

On a positive note, artefact delivery is separate from other deliveries; however, the design of spaces used for artefact handling is not suitable for this function in its current form. The artefact storage situated at the centre of the artefact handling section, and all the service areas open from there. It is entirely impossible to reach the other areas by passing through the artefact storage space, but this problem can be probably solved by changing the design.

The design of the office area is completely impractical. An open office layout is not suitable for staff members conducting research work. Office rooms accommodating 2-3 persons and receiving natural light would be needed for each department.

#### 2564

Visitors arrive in the entrance hall on the first floor through the main entrance. The service points are lined up on the right of the entrance hall. The position of the information counter, the ticket office and the cloakroom allow these services to be accessed only from one direction, creating a difficulty in appropriately accommodating large crowds of queuing visitors.

The temporary exhibition space of the National Gallery opens from the entrance hall, on the first floor. It can be flexibly divided into several sections, but it is problematic that the contemplative shrine, the graphics cabinets and the visual store for sculptures can only be accessed from the temporary exhibition space. The permanent exhibitions of the National Gallery can be found on the second floor, and can be easily reached by visitors either by the main staircase starting from the middle of the entrance hall, or by the lifts. In the case of large numbers of visitors, it might cause a problem that the staircase and the lift lead directly into the exhibition space. The architect provided complete flexibility in altering the interior structure of the exhibition space in this case, too. The exhibition spaces of the Ludwig Museum are located on the ground floor, thus the chronologically uninterrupted presentation of the permanent exhibitions of the National Gallery and the Ludwig Museum is not possible. The architect gave a free hand to the Ludwig Museum to shape the interior structure, and also to divide the temporary and the permanent exhibition spaces of the museum.

The artefact delivery routes are thought through, but remain unplanned; the artefacts are moved between the levels by an artefact delivery lift. However, the artefact delivery lift directly leads into the exhibition space, which is not ideal either from the point of view of security, or the organisation of an exhibition.

A positive feature of the design is the separate visitor entrances providing entry for the events of the two institutions.

The offices have a good design, although their sporadic location across the building makes it difficult for staff members to work together.

### **3087**

The museum shops and visitor lifts open from the entrance hall and are therefore easy to see, while the boks-like layout of the other services and service facilities (audio guide, lockers for valuables, volunteers' room, etc.) in the centre is unfortunate.

The temporary exhibitions are easily accessible, and there is a large enough space available to handle visitors queuing up at the entrance to the exhibitions. It is a disadvantage in the temporary exhibition spaces of the National Gallery that the exhibition space is located on three levels, thus making it unsuitable to host "blockbuster" exhibitions, which would require a large uninterrupted space. The lift used for moving artifacts arrives directly at the exhibition area, which is far from being ideal from the point of view of security and exhibition organisation. Similar security concerns are raised by the parking lot being positioned underneath the exhibition area.

The artifact handling functions are designed with consideration to practicality. The artifact delivery and general delivery are separated in the delivery space.

As regards the design of the office area, no adequate answer is provided as to how natural light will be provided in the areas behind the walls fitted with metal covering.

### **3405**

The four buildings in the plans represent four autonomous units in a visual sense too. The National Gallery, the Ludwig Museum, the Gaia Lab and the administrative facility are allocated separate building. The four buildings are placed along the historic access of the Városliget (City Park), with a set of steps each leading down to the underground level, where the central entrance hall can be found, from the direction of the Napozó-rét (sunbathing lawns) and the Városligeti körút. The four buildings are united on this level, yet the Ludwig Museum and the National Gallery both have an entirely separate entrance, ticket office and information counter. The temporary exhibition spaces of these two institutions are located on this level too. They provide easy access and are suitable to handle large crowds queuing up; however, the L-shaped plan of the Ludwig Museum's temporary exhibition is unsuitable from the point of view of exhibition organisation.

### **3759**

It is also not ideal that the various service points are on different levels, which might be particularly problematic in the case of the ticket office and the cloakroom not being on the same floor. In order to break up the monotony of the permanent exhibition spaces,

the architect separated them, thus eliminating the option of connecting these spaces. On the one hand, this solution disrupts the thematic order of the exhibition, and on the other hand, it diverts visitors' attention from the exhibition experience and results in a route that is difficult for visitors to follow.

It might cause problems in regard to organisation that the events hall located on the fourth floor can be only reached from the temporary exhibition space; thus, it cannot be accessed when new exhibitions are being installed.

The artefact delivery lift directly arriving in the exhibition space is questionable both from the point of view of security and exhibition organisation. The location of the endpoint of other delivery is satisfactory, although moving goods between the building's levels either overlaps with the route of artefact delivery, or can only be done by covering great distances and using several lifts.

There is only one staff entrance, which starts from the parking lot.

The offices are ideally positioned and provided with ample natural light.

#### **6418**

The entrance hall directly opens into the main staircase, which serves as the main thoroughfare between the levels of the building. To the left is the ticket office, which is unsuitable for managing large crowds because of its location. The permanent exhibitions of each of the two institutions are allocated on a different level, thus spaces of the two institutions are separated from each other. The areas in front of the temporary exhibition spaces are sufficiently large to accommodate bigger crowds of visitors queuing up.

Guests arriving to museum education classes or events will have to be underground on the basement level, excluding natural light (to be approached by the main stairs or elevators). Artefact handling spaces are separated on two different levels, that are linked by one artefact elevator. The artefact elevator's placement in front of the staff entrance is not favourable due to artefact security and reasons of transportation.

The offices are ideally located in the dome, where they receive plenty of natural light.

#### **8210**

The two ground floor visitor entrances of the building are positioned at a right angle with the historic axis of the Városliget (City Park). The main entrance opens from Zichy Mihály út, the information counter, the ticket office and the audio guide counter are all on the left side. Unfortunately, the cloakroom is located on the next level.

The design of the two institutions is based on a "house within a house" concept. The outer zone is the area of the National Gallery, while the inner zone is occupied by that of the Ludwig Museum. The permanent exhibition spaces are on the second and third floors, while the fourth floor wing of the National Gallery overlooking the Napozórét (sunbathing lawns) also provides a venue for permanent exhibitions. The Ludwig Museum's temporary exhibition space is located on the fourth floor, at the core of the building, while that of the National Gallery is on level -2, also at the core of the institution. Visitors are able to walk around each level of the permanent exhibition spaces of the outer zone, but these spaces have significant limitations from the exhibition

organizers' point of view. The permanent exhibition space at the core of Ludwig Museum is lent great flexibility from the point of view of exhibition organisation. The narrow corridor that can be used by visitors to access the temporary exhibition space on level -2 of the National Gallery cannot accommodate large crowds queuing up.

### **8591**

Temporary exhibition spaces of the National Gallery as well as the permanent exhibitions of the Ludwig Museum can only be approached via a narrow corridor. The permanent exhibition of the Ludwig Museum continues on the first and second floors, from where there is direct access to the permanent exhibition spaces of the National Gallery. Exciting teaser exhibition spaces heralding the on-going exhibitions have been set up on both sides, along the main axis of the building. The exhibition space of the Ludwig Museum on the basement level is difficult to access, and since the staircase that leads there takes visitors directly to the exhibition space, it does not accommodate large crowds of visitors.

Artefact handling spaces are separated from artefact delivery areas, but they are connected by two elevators.

Lifts arriving directly in the exhibition space raises concerns in regard to security and organisation exhibition.

The offices are ideally designed.

### **8603**

Functions are orientated according to daylight needs. However, office spaces have limited solar access and external views. The sloping facade can reflect high-angle summer sun along the walkable roof resulting in unwanted glare in exterior surfaces.

The ventilation strategy of the building is energy- and comfort optimised, reflects the needs of the several internal functions. Natural ventilation can be utilised. The building orientation ensures the limited occur of draught.

The proposed radiant heating and cooling (TABS), displacement ventilation provide high thermal comfort levels.

The proposal is considered good regarding health and wellbeing issues.

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# TECHNOLOGY AND FUNCTION

## FUNCTIONAL CONTACTS

### LUDWIG MUSEUM

**0476**

The functions of the house are separated according to the 6 level of the building. This is a clear system, but the curatorial functions of the two different museums are not divided.

**2564**

The functions are generally well separated, but the public functions on the ground floor are partly mixed with the temporary exhibition, which can cause disorder.

**3087**

The two museums are well separated, as well as the curatorial and public functions of the building. The permanent exhibitions are spatially connected, as it was required. Some rooms with public functions (dining room, workshop for museum learning) are connected with the permanent exhibition (the path goes through the exhibition rooms), which is a mistake.

**3405**

The didactic functions and event areas are organized on the upper levels. Shops, cafes and other plaza functions are together, at the entrance level.

However, the exhibition rooms are not very well organized, the visitors' route seems to be too complicated.

**3759**

The two museums are connected by one design strategy and are separated softly. The modular system of the exhibition and public spaces creates a non-hierarchical, transparent architectural form, with the possibility of free entering to the different spaces. The high-security art environments are separated from the public zones.

**6418**

The whole building has a clear, transparent structure, where the functions are very well organized.

**8210**

The functions of the two museums are well separated, but again, the shape of the building creates sometimes multiple rooms of the same function (for example lecture rooms).

**8591**

Functions for the two institutions are well separated, the contacts of the rooms are logical.

**8603**

The service points of the entrance hall are clearly laid out, but the main orientation unit has no bathrooms for visitors.

The permanent exhibition spaces are allocated a place on the basement level. They can be flexibly divided, and the spaces of the two institutions can be joined together at preferable points. Handling visitors might be problematic in the case of the temporary exhibitions too, although a minor alteration in the design can provide a solution.

Artefacts can be delivered to the exhibition spaces and to the artefact handling spaces (the latter being located on the basement level) by lifts starting from the artifact delivery dock on the ground floor. Problems might arise if the lift is out of order, since there is no temporary artefact storage space on this level that is connected to the dock. This difficulty can be solved by altering the design or by making the other artefact lift accessible from the dock. On a positive note, other goods delivery can be separated from artefact delivery.

The design of the offices and the spaces to be used for museum education and various events is well thought through, sensible and practical.

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# TECHNOLOGY AND FUNCTION

## TRANSPORTATION SYSTEMS

### (IN THE BUILDING)

#### LORD

**0476**

Outdoor accesses as well as Visitor's path inside the building is well structured and clear.

Delivery accesses for cultural areas should be improved: lifts are quite far from both event halls and/or open on narrow circulations, crossing the visitor path. This is particularly true for the LM events spaces, located on the lower rooftop (level 4).

Artworks circulations within the galleries spaces are quite clear for both museums. Nevertheless, the artefacts handling areas should be rethought: for both museums, artefacts handling / caring spaces such as transit storages, workshops etc. are only accessible through the artefacts storage rooms. This point represents a big issue: corridors should be provided to serve the different spaces, that in the current proposal are more circulation spaces rather than real dedicated rooms.

The corridors linking lifts to galleries should be improved: artefacts handling could be difficult in bent spaces.

**2564**

LM temporary exhibition spaces are accessible for deliveries through the permanent exhibition galleries.

Event halls are not easily accessible for deliveries, as well as shops, cafés etc.; at least one lift dedicated to goods deliveries is lacking.

Public accesses to the Museum Learning areas as conceived as secondary accesses and are not enough visible.

Staff entrance is not clearly located, generating issues regarding the LM event area backstage: rooms can be accessed only through the exhibition areas.

**3087**

The organization of the basement, dedicated to deliveries and technical areas, doesn't allow artefacts delivery to the whole exhibition spaces of both museums: there is no elevator for artefacts leading directly to the NNG temporary exhibition spaces.

In the deliveries areas some spaces are not directly accessible such as the NNG unpackage / package rooms; some others provide unusable volumes such as the NNG carpenter workshop.

Artefacts deliveries and goods deliveries should be clearly distinguished.

Learning areas can't be accessed directly from the main entrance hall: visitors are supposed to pass through the exhibition spaces.

Access to the museum shops should be improved in order to provide direct entrance from outside.

Gaia Lab dedicated elevator is missing.

### **3405**

The split organization of spaces multiplies stairs and lifts, and makes both the visitor and staff route complex and quite confusing. This is quite relevant for disabled people. Furthermore, access for disabled people to the main entrance hall is not satisfactory: there is only one elevator, quite 'hidden' and difficult to find.

Learning areas can't be accessed directly from the main entrance hall: visitors should walk through the exhibition spaces.

Research spaces, located within the temporary exhibition, have no independent and easy access for neither staff nor artworks.

Artefacts transportation should be improved: the use of two successive elevators to reach the artefacts handling spaces is quite complicated, and movements along the narrow corridors is inconvenient.

Goods deliveries have to be clarified, especially for museum shops and café. Dedicated lifts are not clearly identified.

Gaia Lab dedicated elevator is not clearly defined.

### **3759**

Many circulations should be improved or rethought. Particularly:

- circulation through the exhibition spaces and connexion with the cafés, designed as rest places within the main route;
- outdoor path and access control to the exhibition spaces from the external terraces;
- goods deliveries for shops, cafés, event halls;
- route to event halls from the main entrance hall (no direct access);
- route to museum learning areas;
- disabled access to the slopes.

However, the architecture made of independent boxes is flexible enough to allow improvements, even though significant changes should be made.

Artworks route is satisfactory.

**6418**

All the accesses are well organized: visitors (disabled or not), staff, goods and artworks deliveries.

All routes are quite clear and provide separated paths for each type of transportation.

However, the width of the artworks corridor should be increased: current width around 2.7 m is too narrow.

The NNG Research space can't be easily delivered (here the artefact route crosses the visitor path).

One of the two secondary stairs leading from the main entrance to the first ground level doesn't appear in the ground floor plan.

**8210**

A strong signage would be required for a clear orientation of visitors: though a main access to exhibition areas is provided through two stairs under the info-ticketing and audioguide desk, there are several vertical circulations leading to the galleries (enclosed staircases and lifts).

Despite dedicated staircases and lifts, staff's route crosses the visitors' one in several points.

The artefacts route should be improved:

- the elevator bringing trucks to level -2 could be complicated and expensive in terms of maintenance;
- the organization of the delivery dock and the arriving/handling area is not functional;
- the organization of the artefact storages is not convenient; many surfaces are dedicated to circulations while there is only one artefact elevator to deliver the whole exhibition galleries.

This last point constitutes the main hindrance to the Museum functioning: due to the 'inner' and 'outer' organization concept, artefacts route crosses in many places the visitors one, that is particularly an issue for the LM temporary exhibition gallery everyday life.

The Event areas can be delivered only through sculptures exhibition hall, that is not optimal.

**8591**

Due to the organization of exhibition areas on several levels, the visitors route is quite complicated, particularly for disabled people.

Staff path crosses the visitors' one in several parts of the Museum. Conflicts could also be noticed between artefacts and visitors routes (i.e. delivery of exhibition areas on ground floor).

The organization of the delivery dock and artefact arriving/handling is quite good, however the access to the storages and the handling areas (i.e. (un)packaging, photo studios) is difficult. Artefact elevators are located either in the middle of exhibition spaces (LM) or opening on public corridors (NNG), which is not optimal for deliveries.

**8603**

The route of visitors through the exhibition areas is quite tricky; connections between the different galleries are assured mainly by lifts.

The artefacts route is very complicated: elevators should be used several times to access key support rooms of artefact handling (i.e. photo studios, research in storage and documentary research) and the delivery of exhibition areas requires to go through a very long ring underground corridor. Artefacts elevator opens on narrow spaces which is not convenient for artefacts handling.

A separated access for staff is provided at each level, without crossing visitors routes. But again, staff should go through the very long underground corridor all around the building to access to the different spaces.

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# TECHNOLOGY AND FUNCTION

## TRANSPORTATION SYSTEMS

### (IN THE BUILDING)

#### MNG

**0476**

Certain services and exhibition spaces are well approachable for visitors and guests arriving to events. Artefact handling route between different levels is ensured by two artefact elevators, thus art handling is ensured if by accident one of the elevators is disabled. Artefact delivery is also transparent, however other service spaces opening from the afore mentioned artefact storages are not appropriate.

**2564**

See “functional contacts”.

**3087**

Certain services and exhibition spaces are well approachable for visitors and guests arriving to events. Main stairs and elevators starting from the Atrium Routes conduct the routes for them. Artefact Handling Routes are transparent between artefact handling spaces of the basement and the delivery spaces and Artefact elevators placed at the two different wings of the building ensure the moving of artworks between different levels.

**3405**

It might be problematic for visitors to be able to approach the buildings from underground levels and being able to view the permanent exhibitions making one’s way from the -1 level to the top. The design does not make it possible for the permanent exhibitions of the two institutions to be presented in a chronologically uninterrupted way. Trucks doing the artefact delivery can load and unload in the dock located on the ground floor of the Gaia building, from where artefacts can be moved into exhibition spaces and artefact handling areas by artefact delivery lifts. In order for artefacts to be moved to the artefact handling areas, they first need to be taken down to level -2, and from there to the handling areas. The two other goods delivery lifts, leading into the exhibition spaces, can also only be accessed in this way. A serious problem arises if the lifts are out of order, since there is no temporary storage facility accessible from the artefact delivery dock. There is no solution provided for the delivery of other goods. Circulation between the office building and the other parts is difficult as it is only possible through the basement level.

**3759**

The building has a logically designed system of movement/transport however visitors will find it hard to find their way due to the building's many corners and playful set-up. Regarding artefact handling spaces, the design includes rooms that are inaccessible; access to the artefact lift is also left unresolved. This problem can be solved by soft altering the design.

**6418**

Visitors will approach exhibition spaces by the main stairs or elevators from the Entrance Hall, whereas different services (ticketing, cloakroom, audio guide etc.) are next to each other on the ground floor.

The artefact delivery routes are well thought through. All the artefact handling and exhibition areas can be easily accessed from the artefact delivery dock. Location of the artefact elevator is not favourable. Delivery of other goods can be done through the underground car park on a route not overlapping with that of artefact delivery.

**8210**

Visitors arrive to the main hall from both of the entrances. Exhibition spaces of above and below levels are to be approached via main stairs and elevators. Guests arriving to events will find all relevant services and spaces on the ground floor. Museum education spaces are placed on the fourth floor, making it difficult for bigger groups to approach these locations. Artefact delivery and artefact handling is done on the -2 level. Places are easily approachable but exhibition spaces only reachable by one Artefact elevator, thus the failure of the elevator might cause problems.

**8591**

Visitors arriving from Napozórét will find a complicated narrow entrance hall, as all service points of the area are to be found at the other end of the corridor (with a stairway on the way). Visitors arriving through the main entrance find a clearer system, however temporary exhibitions of the National Gallery and main-floor permanent exhibitions of the Ludwig Museum are hard to approach. Visitors arriving to event will find their way easily. Artefact delivery is done from Zichy Mihály út; the lorries can load and unload in the ground floor delivery dock. The artefacts can be moved between the levels of the building by two artifact lifts, both of which start from the dock; however, the artefact lift of the National Gallery can be accessed either through the temporary exhibition space, or by taking the lift of the Ludwig Museum to the basement level and following a long, winding path to the lift of the National Gallery.

**8603**

From the visitor's point of view it is favourable that the approach to the two institutions is well separated, thus making it clear that each of the museums is autonomous. Common service spaces can be reached from the Main Hall, whereas each museum has their own event space well separated. Exhibition spaces can be approached through elevators and stairs in both of the institutions however they are restricted by a narrow entrance hall on both sides. See "Functional contact" for artefact handling route.

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# TECHNOLOGY AND FUNCTION

## TRANSPORTATION SYSTEMS

### (IN THE BUILDING)

#### LUDWIG MUSEUM

**0476**

Transportation of artifacts happens at back of the house, which is separated from the public functions, which is a good system. However, moving of items inside the building (see especially: storage - restoration etc.) seems very complicated.

**2564**

The transportation of artifacts and goods is solved on the first basement. The vertical circulation is solved by elevators and stairs - it is not clear, how the individual institutions and exhibitions can be separated from each other.

**3087**

Transport and circulation of artifacts is solved for both institutions.

**3405**

Transportation of artifacts is solved on the ground floor, crates can be delivered to the common second basement, not directly to the exhibition rooms. Each museum has its own transport lift, connecting this level with the exhibition rooms.

**3759**

The public and non-public transport systems are well separated. The art handling doesn't cross with goods, trash or visitor circulation.

**6418**

Circulation of visitors is well organized via the entrance hall and the central staircase. Transporting of artifacts, as well as staff circulation is logical and safe.

**8210**

The way of delivery and artifact handling inside the building is not explained properly. Parking is not solved on the spot, according the architects decision. This can make troubles not only for the institutions, but for example for disabled visitors, too.

**8591**

Loading of artifacts take place in a covered indoor garage, separated from other transports, but the path itself is crosses other circulations, as the art handling happens on other levels. The crates and artworks can be shipped via elevators and bridges.

**8603**

The art delivery dock has an access from Hermina street, separated from other deliveries - but the type of the route is not clear on the plans. The artworks are transported from here to the -3 level by elevator. The exhibition rooms can be reached by two further elevators from -3.

Parking and small delivery is located under the museum plaza part.

There's a dedicated staff entrance, too.

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# SUSTAINABILITY

## ENERGY EFFICIENCY

### NÁNDOR KOVÁCS

**0476**

The proposal includes higher U-values than the requirement. However, due to the building form (large cantilevers) the building has larger exposed surface than other proposals.

The concept does not account for on-site renewables, although the building form would be (partly) suitable for that.

Low eaves and shading incorporated in glass façade adequately limit unwanted solar gains. The building is partly orientated according to the solar exposure.

The use of RC slabs and core thermal mass can be utilised, also promoting adaptation to climate change.

Based on the above, the proposal is considered average regarding energy efficiency.

**2564**

Although the building has an average U-value weighted external surface, a set of energy efficiency measures were proposed to reduce energy demand (such as use of free cooling, interlocking and CO<sub>2</sub> sensors, etc.).

Low eaves can limit unwanted solar gains, while the need for artificial lighting is kept to a minimum.

The roof is prepared for PV installations.

The thermal mass of composite slabs can be moderately utilised (however, they are recognised at the materials section).

Based on the above, the concept is considered good regarding energy efficiency.

**3087**

Although the envelope solution of the building is unclear, the building form results in a limited amount of envelope surface. The proposed ventilated façade can also contribute to energy efficiency due to reducing surface temperature of walls and cooling loads.

It is not marked on the designs, but the roof is suitable for the proposed on-site renewable energy sources (PV/solar collectors).

Most of the offices are well orientated, the amount of glazed surfaces are kept to a minimum. Together with the efficient use of thermal mass, these contribute to adapting to climate change.

The proposal is considered good from energy perspective, based on the above.

**3405**

The building form results in high external surface area, which is partly balanced by locating several functions underground. The size, location and orientation of glazed surfaces are merely optimised by purpose. The current shading strategy (fixed vertical shading) is not suitable for south facing façades, additional measures would be desirable, and for some of the skylights as well.

Although it is not marked on the drawings, the roofs are suitable for PVs/solar collectors.

The building orientation is not optimised, downdraught might occur in the walk-throughs due to their width/height ratio.

Based on the above, the proposal is considered average from energy perspective.

**3759**

The articulated building form results in a large amount of exposed envelope surface. However, it is balanced through the use of a set of energy efficient measure such as the climatic design, low velocity and low temperature internal comfort conditioning, the use of daylight without increasing the overheating risks.

External solar protection is proposed for the east, west and south facing, triple glazing façades. However, skylight shading would be desirable for this concept.

The roofs are suitable for the proposed on-site renewables (PV and solar collectors), although no details were provided.

According to the climatic analysis, the building accounts for the climate change through the use of thermal mass and limiting overheating risk.

The proposal is considered good from energy perspective.

**6418**

The proposal incorporates underground spaces, the glazed surfaces and envelope area are kept to a minimum. Based on that, the building concept is considered energy efficient. Further energy use reduction can be achieved with overnight cooling through the skylights acting as windcatchers. However, the shading of skylights would be essential for this concept - to limit unwanted solar gains in summer -, and the design does not account for it.

The use of PCM in the interior spaces contributes to the optimal utilisation of thermal mass.

Based on the above, the proposal is considered good from energy perspective.

**8210**

The proposal has a compact building form with glazed openings kept to a minimum except of the skylight provision. Due to this fact, the benefits of this concept cannot be enjoyed, the U-value weighted surface area is the largest among the entrants. This type of skylight provision raises shading issues as well.

The building has a symmetric form, but not optimised for orientation. An innovative climate control solution (spraywater to external surfaces) is proposed. Underground air ducts also improve the efficiency of the ventilation system.

No on-site renewable energy is proposed except of GSHP, and the building form is not optimal for solar-based systems).

Due to the overheating risk resulting from the skylight and the water-hungry solution, the concept has limited adaptation to climate change.

From energy perspective the proposal is considered average.

### **8591**

The shape and orientation of the building ensures the energy efficient operation. The reduction of artificial lighting demand with adaptive shading and the passive solar design are recognised within this aspect. However, the amount of glazed surfaces might be a subject of review in some cases.

The location and orientation of the on-site renewables i.e. PVs are excellent. It needs to be noted however, that the 'pixelated' distribution might increase the capital and maintenance cost of this solution.

The proposal accounts for climate change with the utilisation of thermal mass, reducing overheating risk with external shading and orientation (functions based on solar exposure).

The proposal is considered exceptional from energy perspective.

### **8603**

The compact form of the building ensures that the exterior surfaces (envelope) is kept to a minimum.

Well orientated glazed surfaces act as a passive solar design solution, the external shading can prevent unnecessary solar gains.

The proposal includes on-site renewable energy (integrated PVs), partly well orientated, i.e. south facing.

The thermal mass of rammed earth and concrete as primary materials together with the optimised glazing contribute to the adapting to climate change (avoid overheating).

The proposal is considered exceptional from energy perspective.

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# SUSTAINABILITY

## HEALTH AND COMFORT

### NÁNDOR KOVÁCS

**0476**

Use of skylights combined with dimmable lights provide appropriate visual comfort for most of the spaces where it is deemed desirable. Air wells can contribute to mixed mode ventilation, the underfloor air distribution is optimal for this function, ensuring lower air velocities and higher thermal comfort levels.

Based on the above, the proposal is considered good regarding health and wellbeing.

**2564**

The window ratio is optimised according to the functions, adequate visual comfort levels can be achieved at the workstations. Windcatchers provide two-sided natural ventilation for the office spaces.

Chilled beams provide higher thermal comfort levels, fan-coils (proposed for other spaces) are considered suboptimal for this building type.

The proposal is considered good from health and wellbeing perspective according to its optimised layout.

**3087**

Daylight penetration is ensured in less than 50% of the spaces where it would be useful. The shallow patios at the office level do not provide acceptable visual comfort and negatively impact privacy.

Natural or hybrid ventilation might be possible through the foyer and in some office spaces (one-sided). No further details were provided regarding thermal comfort levels. Draught may occur due to the shallow cuts in the building form.

The proposal is considered average from health and wellbeing perspective.

**3405**

The proposed fixed vertical shading cannot provide appropriate glare control for office spaces. Although the location of workstations are excellent (around the perimeter of the administrative building), the visual comfort levels might be below acceptable for spaces facing the walkthroughs.

The space depths for the offices are suitable for one-sided natural ventilation as well. No details were provided regarding solutions affecting thermal comfort levels.

Based on the above, the proposal is considered average from health and wellbeing perspective.

**3759**

Due to the use of low eaves, daylight penetration and good visual comfort can be provided for most of the non-exhibition spaces. The proposed displacement ventilation and radiant cooling ensure high thermal comfort levels, in some parts of the building natural ventilation strategies would be also applicable, as stated in the proposal. Hence it is considered excellent from health and wellbeing perspective.

**6418**

The skylight distribution ensures the daylight penetration in most of the spaces where it is deemed useful. However, the proposed height of office windows (1m) does not ensure appropriate visual comfort for this spaces, it might be a subject to reconsideration.

There is a potential for natural ventilation through the 'windcatchers', however the air supply (intake) for that should be ensured in deeper spaces as well.

The proposed underfloor radiant heating provides good thermal comfort levels, although the cooling concept is unclear.

Based on the potential in these solutions, the proposal is considered excellent from health and wellbeing perspective.

**8210**

The concept is capable for enhanced daylight penetration, the office spaces and circulation is located accordingly. The atrium has a potential for natural ventilation but the fresh air supply for it is not validated based on the design.

No details are provided to evaluate the thermal comfort concept.

From health and wellbeing perspective the proposal is considered average.

**8591**

The building has excellent daylight possibilities due to the building form and skylight distribution. Daylight penetration can be ensured in most of the non-exhibition spaces appropriate view out is also provided for workstations.

The proposed displacement ventilation system is an optimal choice for this function, due to the high openable glazed surfaces, natural ventilation can also be utilised. The building form contributes to better outdoor climatic conditions.

The proposed heating-cooling system (radiant cooling, thermal reflection) ensures high comfort levels and lower energy consumption than conventional systems.

The proposal is considered exceptional from health and wellbeing perspective.

**8603**

Functions are orientated according to daylight needs. However, office spaces have limited solar access and external views. The sloping facade can reflect high-angle summer sun along the walkable roof resulting in unwanted glare in exterior surfaces.

The ventilation strategy of the building is energy- and comfort optimised, reflects the needs of the several internal functions. Natural ventilation can be utilised. The building orientation ensures the limited occur of downdraught.

The proposed radiant heating and cooling (TABS), displacement ventilation provide high thermal comfort levels.

The proposal is considered good regarding health and wellbeing issues.

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# SUSTAINABILITY

## WATER MANAGEMENT

### NÁNDOR KOVÁCS

**0476**

The building includes water saving measures justified by calculations against an appropriate baseline. According to water hierarchy, the demand is reduced and reclaimed water is also utilised - however, green roofs provide limited usability of harvested rainwater. The roof concept is considered as an SUD reducing rainwater run-off and discharge and accounting for climate change. Hence the proposal is considered excellent from water management perspective.

**2564**

The concept incorporates water demand reduction features, but no details of any water reclaiming system are provided (including space allotment). However, a significant greenery is designed promoting rainwater filtration and adaptation to climate change.

Based on the above, the proposal is considered good from water management perspective.

**3087**

The site layouts provides higher green area ratio than other proposals, contributing to run-off attenuation. A greywater collection and utilisation systems is provided, however there are no details of further water demand reduction or rainwater harvesting. Hence the proposal is considered average from water management perspective.

**3405**

No details provided for water demand reduction solutions, except the rainwater harvesting. There would be a great potential for incorporating green roof which could limit rainwater run-off and discharge and also contribute to the adaptation to climate change.

Based on the above, the proposal is considered average from water perspective in its current form.

**3759**

The concept accounts for flood risk mitigation, reducing rainwater discharge from site with the utilisation of SUDs. Water saving features and rainwater harvesting are also implemented, according to water hierarchy. Based on the above, the proposal is considered excellent from water management perspective.

**6418**

No details were provided for water management.

**8210**

No details provided for water demand reduction solutions, except the utilisation of captured rainwater. It also contributes to run-off reduction, and a moderate amount of greenery is provided – but no green roof.

**8591**

Although the proposal does not account for the water hierarchy, the rainwater collection and reuse for sanitary flushing is recognised within this issue.

Rainwater is harvested, but no green roofs or other flood risk mitigation measures are incorporated.

The proposal is considered good from water management perspective.

**8603**

The proposal is designed according to water hierarchy: several water demand reduction measures are implemented, the building is suitable for rainwater collection. The recycled rainwater will be used for toilet flushing purposes.

Rainwater run-off is considered. However, the only SUD for run-off attenuation is the proposed rainwater collection systems, the design does not incorporate green roofs.

The proposal is deemed excellent from water management perspective.

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# SUSTAINABILITY

## ENVIRONMENTAL IMPACT OF BUILDING MATERIALS

### NÁNDOR KOVÁCS

**0476**

Although steel structures have limited life-cycle impact, extreme spans (40-80m) are proposed with floor-high trusses resulting in large material quantities. The limestone façade is not considered as a favourable option from environmental perspective.

Based on the above the proposal is considered poor regarding the environmental impact of materials.

**2564**

The selected structure - rational steel plate girder with thin reinforced concrete slabs - can only partly balance the effect of large (30m) spans on the environmental impact of materials. The use of recycled materials on the façade (glassceramic) is excellent from LCA perspective. The proposal is considered good regarding the material use.

**3087**

The building form and structure (normal spans) ensures limited material usage. However, only in-situ concrete structures are proposed (even for wall constructions) with high LCA value. Therefore the proposal is considered average regarding material use.

**3405**

The building form and structure (normal spans) ensures limited material usage. However, only in-situ concrete structures are proposed (even for wall constructions) with high LCA value. Therefore the proposal is considered average regarding material use.

**3759**

Due to the articulated building form, high amount of material is required. However, twin-tee slabs and smaller spans would result in efficient structures and limited material impact. From environmental perspective, the precast concrete walls cannot be justified, this type of envelope has much higher LCA value than other possible solutions. The proposal is considered average from material usage perspective.

**6418**

The building has an optimised material use. The sandwich panels for the skylights ensure precise construction and low LCA values for the envelope. The use of PCM makes up for the loss in thermal mass due to this material selection. The structure has normal spans, the quantity of material usage is kept to a minimum.

Based on the above, the proposal is considered excellent from material perspective.

**8210**

Although the structural concept imposes large spans, the structure rationality and the material selection - recycled aggregate use, steel roof structure, ribbed slabs -contributes to a limited environmental impact of building materials. The requirement for in-situ concrete walls should be validated, it might have a potential to reduce the concrete use.

From material perspective the proposal is considered good.

**8591**

The building has a compact form, normal spans. Although the material use is merely conventional, ribbed/waffle slabs ensure better structure efficiency and limited material quantities. Hence the proposal is considered good from material usage perspective.

**8603**

Due to the compact form and structural concept, the material quantity needs of the building is kept to a minimum, incorporates normal spans.

The chosen external wall material (rammed earth) represents an exceptionally environmental friendly solution.

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# SUSTAINABILITY

## INNOVATION

### NÁNDOR KOVÁCS

**0476**

The utilisation of green roof to this degree is exceptional among the proposals, hence it is recognised within this section, together with approach to energy- and water design representing a good practice.

**2564**

The enhanced natural ventilation of the offices may contribute to higher comfort levels and reduced energy demand as well. The use of 'smart building' techniques might also increase energy efficiency.

**3087**

No significant environmental innovation could have been identified; the details of the concept are unclear.

**3405**

The proposal incorporates a very innovative energy storage system to reduce and flatten peak loads. Locating several functions underground can also reduce heating and cooling demands.

**3759**

The analysis of local climate factors which has influenced the design is considered as an exceptional design approach. Accounting for outdoor comfort conditions (terraces) are also recognised within this section.

**6418**

Underground building, parametric design and the use of passive solutions (windcatchers and skylights) are considered as exceptional energy innovations and recognised within this section.

**8210**

The water-spray system, underground air ducts are recognised as energy innovation. The use of cable net system for roof support can dramatically reduce the structural needs, it is considered as innovation with an environmental impact.

**8591**

The proposed active daylight control, solar exposure as a basis of design resulting in maximised daylight penetration are considered innovative for this function. The ventilation concept can also contribute to energy demand reduction.

**8603**

Several innovative features are incorporated in the concept which are recognised within this section.

The material use is exceptional, daylight penetration for non-exhibition spaces, passive solar design, the throughout ventilation strategy are considered innovative.

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# SUSTAINABILITY

## ECOLOGY

### KALMÁRNÉ FEJES ZSUZSANNA

#### 0476

Similarly to the other applications in this case large structures are built below the surface level as well. In most of the cases this means high-volume excavations, so the possibility of vanishing of the existing green surface with trees of significant value (according to VÉSZ) is most likely. This resulted 3 trees of significant value (according to VÉSZ) to be felled within the borders of the construction place. Next to the borders of the construction place the protection of 7 further trees of significant value (according to VÉSZ) is in question. The protection 7 further trees of significant value (according to VÉSZ) is also in question along the access road leading to the building. According to the plans of the application, the geodesy plan and the regulations another 58 trees probably needed to be felled (within the borders of the construction place).

The lack of survey of a possible protection method of trees of significant value is a shortcoming of the application.

Significant and strong element of the application is creation of extensive green roof surfaces (with 15-30 cm substrate depth) on the roof surface and on the walkable terraces of 4 level. This represents many advantages to the building itself and also to the environmental planning. The vanishing green spaces occupied by the new building would be partly compensated by green roof surfaces. Even though a green roof could not represent the same ecological value as a three-storeyed, high foliage covered green surface, with good plant application a self-sustaining, biodiverse habitat could be created to provide living place even for smaller sized mammals.

Planting *Prunus serrulata* varieties (ornamental cherry trees) would represent fresh vision, but the integration of them to the existing trees has to be examined. The newly planted trees around the new building should harmonize with the whole park surface.

Another advantage of the application is the utilization of rainwater, so the irrigation of green surfaces could be supported.

Although not contained within the design criteria it would be worth considering the possibilities of planting the vertical facades (application of climbers, not artificial green wall systems - according to the BREEAM recommendations).

Partitioning with green areas of the planned pavement surfaces could be a good solution to reduce the rate of pavement areas. With this the integration of the building into the park (to green surface) could be realized in a better way.

#### **2564**

Similarly to the other applications in this case large structures are built below the surface level as well. In most of the cases this means high-volume excavations, so the possibility of vanishing of the existing green surface with trees of significant value (according to VÉSZ) is most likely. This resulted 3 trees of significant value (according to VÉSZ) to be felled within the borders of the construction place. Next to the borders of the construction place the protection of 7 further trees of significant value (according to VÉSZ) is in question. According to the plans of the application, the geodesy plan and the regulations another 58 trees probably needed to be felled (within the borders of the construction place).

The lack of survey of a possible protection method of trees of significant value is a shortcoming of the application.

Important element of the application is creating small gardens („pocket gardens”) of high standard next to the building. The application of planned garden wall system should have to be taken into consideration, while further trees could be felled out during the construction.

Although not contained within the design criteria it would be worth considering the possibilities of planting the vertical facades (application of climbers, not artificial green wall systems - according to the BREEAM recommendations). By this application there are several vertical wall surfaces, also the system of garden walls to develop vertical habitat.

The new building is planned with an enormous area of flat roof structure. The Entrant should consider to cover the building with an extensive green roof, thus creating a significant (possibly biodiverse) habitat.

Another advantage of the application is the utilization of rainwater, so the irrigation of green surfaces could be supported.

#### **3087**

Similarly to the other applications in this case large structures are built below the surface level as well. In most of the cases this means high-volume excavations, so the possibility of vanishing of the existing green surface with trees of significant value (according to VÉSZ) is most likely. This resulted 3 trees of significant value (according to VÉSZ) to be felled within the borders of the construction place. Next to the borders of the construction place the protection of 7 further trees of significant value (according to VÉSZ) is in question. The protection 7 further trees of significant value (according

to VÉSZ) is also in question along the access road leading to the building. According to the plans of the application, the geodesy plan and the regulations another 58 trees probably needed to be felled (within the borders of the construction place).

The lack of survey of a possible protection method of trees of significant value is a shortcoming of the application, although the Entrant tried to reach an optimal rate of planned pavements and green surfaces.

Another advantage of the application is the utilization of rainwater, so the irrigation of green surfaces could be supported.

The possibility of covering roof surface with green roof system is traceable in the application.

Although not contained within the design criteria it would be worth considering the possibilities of planting the vertical facades (application of climbers, not artificial green wall systems - according to the BREEAM recommendations).

### **3405**

Similarly to the other applications in this case large structures are built below the surface level as well. In most of the cases this means high-volume excavations, so the possibility of vanishing of the existing green surface with trees of significant value (according to VÉSZ) is most likely. This resulted 3 trees of significant value (according to VÉSZ) to be felled within the borders of the construction place. Next to the borders of the construction place the protection of 7 further trees of significant value (according to VÉSZ) is in question. According to the plans of the application, the geodesy plan and the regulations another 58 trees probably needed to be felled (within the borders of the construction place).

With tiered landscaping design outlined in the proposal a rich and spectacular vegetation could be created. At the same time the high-volume excavations would endanger the protection of further trees of significant value (according to VÉSZ).

The lack of survey of a possible protection method of trees of significant value is a shortcoming of the application.

Ratio of pavement surfaces is high, only a very little green surface remains, but special attention is given to the integration of the building into the park in this application.

Another advantage of the application is the utilization of rainwater, so the irrigation of green surfaces could be supported.

The integration of ferns and *Taxodium distichum* species (bald cypruses), as an exotic landscape element to the existing trees would need some further examination. The newly planted trees around the new building should harmonize with the whole park.

The new building is planned with an enormous area of flat roof structure. The Entrant should consider to cover the building with an extensive green roof, thus creating a significant (possible biodiverse) habitat.

Although not contained within the design criteria it would be worth considering the possibilities of planting the vertical facades (application of climbers, not artificial green wall systems - according to the BREEAM recommendations).

### **3759**

From ecological view the key element of the application is the protection of existing greenery, mostly of trees. Replanting of 25 and protection of all the other existing trees within and next to the borders of the construction place is planned by the Entrant. However similarly to the other applications in this case large structures are built below the surface level as well. In most cases this means high-volume excavations, so the possibility of vanishing the existing green surface with trees of significant value (according to VÉSZ) is most likely. This could result that 3 trees of significant value (according to VÉSZ) have to be felled within the borders of the construction place. Next to the borders of the construction place the protection of 7 further trees of significant value (according to VÉSZ) could be in question. According to the plans of the application, the geodesy plan and the regulations another 58 trees probably needed to be felled (within the borders of the construction place).

Another advantage of the application is the utilization of rainwater, so the irrigation of green surfaces could be supported.

The Entrant should consider reducing the ratio of pavement surfaces, but at the same time it is an advantage that the storm water run-off is led directly into green surfaces.

Important element of the application is creating green areas of high standard next to the building, and increasing the area of green surface.

The possibility of planting walkable terraces and roof surfaces is not excluded by the Entrant. Besides this there are several roof surfaces of which the cover with an extensive green roof should be taken into consideration. With this a significant (possible biodiverse) habitat could be created.

Although not contained within the design criteria it would be worth considering the possibilities of planting the vertical facades (application of climbers, not artificial green wall systems - according to the BREEAM recommendations).

**6418**

Similarly to the other applications in this case large structures are built below the surface level as well. In most of the cases this means high-volume excavations, so the possibility of vanishing of the existing green surface with trees of significant value (according to VÉSZ) is most likely. This resulted 3 trees of significant value (according to VÉSZ) to be felled within the borders of the construction place. Next to the borders of the construction place the protection of 7 further trees of significant value (according to VÉSZ) is in question. According to the plans of the application, the geodesy plan and the regulations another 58 trees probably needed to be felled (within the borders of the construction place).

The lack of survey of possible protection methods of trees of significant value, and the possibility of usage rainwater for irrigation are shortcomings of the application.

Partitioning with green areas of the planned pavement surfaces could be a good solution to reduce the rate of pavement areas. With this the integration of the building into the park (to green surface) could be realized in a better way.

There are several roof surfaces of which the covering with an extensive green roof should be taken into consideration. With this a significant (possible biodiverse) habitat could be created.

Although not contained within the design criteria it would be worth considering the possibilities of planting the vertical facades (application of climbers, not artificial green wall systems - according to the BREEAM recommendations).

**8210**

From an ecological view the key element of the application is to create some significant green surfaces in the boundaries of the new building. By doing this the Entrant aims to protect the existing greenery, mostly the trees also within and next to the borders of the construction place. However similarly to the other applications in this case large structures are built below the surface level as well. In most cases this means high-volume excavations, so protecting the existing trees could become impossible. During the excavations all of the existing trees next to the present building (Petöfi Csarnok) could be felled out, minimum 25 trees.

Another advantage of the application is the utilization of rainwater, so the irrigation of green surfaces could be supported.

Partitioning with green areas of the planned pavement surfaces could be a good solution to reduce the rate of pavement areas. With this the integration of the building into the park (to green surface) could be realized in a better way.

There are several roof surfaces of which the covering with an extensive green roof should be taken into consideration. With this a significant (possible biodiverse) habitat could be created.

Although not contained within the design criteria it would be worth considering the possibilities of planting the vertical facades (application of climbers, not artificial green wall systems - according to the BREEAM recommendations).

### **8591**

Similarly to the other applications in this case large structures are built below the surface level as well. In most of the cases this means high-volume excavations, so the possibility of vanishing of the existing green surface with trees of significant value (according to VÉSZ) is most likely. This resulted 3 trees of significant value (according to VÉSZ) to be felled within the borders of the construction place. Next to the borders of the construction place the protection of 7 further trees of significant value (according to VÉSZ) is in question. According to the plans of the application, the geodesy plan and the regulations another 58 trees probably needed to be felled (within the borders of the construction place).

The lack of survey of the possible protection methods of trees of significant value, and the possibility of usage rainwater for irrigation are shortcomings of the application.

A strong element of the application is integrating the building into the park by making the most part of the roof surfaces walkable for visitors. The application does not make clear whether the roof surfaces will be covered by vegetation or not.

Although not contained within the design criteria it would be worth considering the possibilities of planting the vertical facades (application of climbers, not artificial green wall systems - according to the BREEAM recommendations).

### **8603**

Similarly to the other applications in this case large structures are built below the surface level as well. In most of the cases this means high-volume excavations, so the possibility of vanishing of the existing green surface with trees of significant value (according to VÉSZ) is most likely. This resulted 3 trees of significant value (according to VÉSZ) to be felled within the borders of the construction place. Next to the borders of the construction place the protection of 7 further trees of significant value (according to VÉSZ) is in question. According to the plans of the application, the geodesy plan and the regulations another 58 trees probably needed to be felled (within the borders of the construction place).

The lack of survey of the possible protection methods of trees of significant value is a shortcoming of the application.

I have not found in the application a specific reference to the possibility of using rainwater for irrigation.

A strong element of the application is integrating the building into the park by making the most part of the roof surfaces walkable for visitors. The application does not make clear whether the roof surfaces will be covered by plantation or not.

Partitioning with green areas of the planned pavement surfaces could be a good solution to reduce the rate of pavement areas. With this the integration of the building into the park (to green surface) could be realized in a better way.

The calculated value of green area is missing from the application.

# COST

## PREDICTED COST OF BUILDING IMPLEMENTATION

### SÁNDOR MÁRK

#### 0476

S size, one mass, significantly floats above terrain, very segmented shape, plain vertical facade, double bent roof, H=appr 30, large voids, medium size subterrain penetration, wide spans, large overhangs, shroud on limestone facade, roof under roof, walkable skylight, terrace roof, wildflower meadow with crushed blue glass, large size exterior ceilings, marble floor, open air atrium, waterfall, observation terrace.

#### 2564

L size, one mass, stems from terrain, box on quadrangular contour, plain vertical facade, plain horizontal roof, H= 20, small void, medium size subterrain penetration, wide spans (30), small cantilever, translucent facade with marble and white recycled glass ceramic (structural), skylights and solid roof, medium size exterior ceilings, lights behind acoustic interior ceiling membrane, pocket garden walls with travertine.

#### 3087

M size, one mass, stems from terrain, double bent facade on wavy contour (95%) and plane facade (5%), plain horizontal roof, H=appr 25-30, significant voids, light subterrain penetration, normal spans, concrete inner skin, perforated and solid panel outer skin, walkable roof.

#### 3405

XL size, four separate masses, stems from terrain, boxes on quadrangular contour, plain vertical facade, plain horizontal roof, H= 27,8, 23,8, 23,6, 17,6, small void, deep subterrain penetration, wide spans.

#### 3759

M size, one mass, moderately floats above terrain, very segmented shape, plain vertical facade, criss-cross- segmented inclined plain roofs, H= 25,0, large voids, deep subterrain penetration, short spans, exposed prefabricated concrete joist slab on facade with painted steel columns and glass handrail, anodized aluminium plate roof and exposed concrete terrace, exterior ceilings.

**6418**

M size, one mass, stems from terrain, tower and „bas-relief” on quadrangular contour, plain vertical facade, structured-segmented inclined plain roofs, H= 12, 12-25, 40, moderate voids, medium size subterrain penetration, wide and normal spans, skylight and sandwich panels with hexagonal colour ceramic tiling roof, glazed facade with wooden mullios.

**8210**

M size, one mass, stems from terrain, box on quadrangular contour, plain vertical facade, parabolic roof, H= 25-29, moderate voids, light subterrain penetration, short and wide spans, erched cable-beam-glass roof, translucent fine porcelain coated glassed panels, veils.

**8591**

M size, one mass, stems from terrain, semi counter-wedges on round contour, s-plain vertical facade, inclined roof, H=appr 26, large voids, light subterrain penetration, wide spans, concrete waffle slab, facade with glass panels, adaptive shading, ceramic tiles, roof with coloured tile and seating and skylights and informal exhibition and photovoltaic panels.

**8603**

L size, one mass, stems from terrain, full counter-wedges on quadrangular contour, plain vertical facade, inclined roof, 20-0, 40-0, large voids, deep subterrain penetration, wide spans expected (regular grid: 12 m) with in-situ-cast concrete, bi-axial hollow core slabs, thermal activation building system, facade with rammed earth and core insulation, roof is public staircase with concrete and stone stairs and terraces, local openings, vast Tilted glass wall with reinforced concrete fins, photovoltaic panels, solar panels, shading.

# COST

## PREDICTED COST OF BUILDING MAINTENANCE

### JÁNOS KOCSÁNY

#### 0476

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	2
Green solutions (green roof, solar cell, rain water collection)	3
Outside walls/windows (isolation, sunless or sunlit)	2
The proportion of natural&artificial light, shading solution	4
Opening light (window)	3
Roof insulation, rooflight, maintenance need/cost	3
Maintainable surface (quantity, material, accessibility)	3
Building cleaning; inside&outside	2
Evaluation	3

#### 2564

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	5
Green solutions (green roof, solar cell, rain water collection)	4
Outside walls/windows (isolation, sunless or sunlit)	5
The proportion of natural&artificial light, shading solution	5
Opening light (window)	4
Roof insulation, rooflight, maintenance need/cost	5
Maintainable surface (quantity, material, accessibility)	5
Building cleaning; inside&outside	5
Evaluation	5

#### 3087

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	2
Green solutions (green roof, solar cell, rain water collection)	3
Outside walls/windows (isolation, sunless or sunlit)	2
The proportion of natural&artificial light, shading solution	2
Opening light (window)	3
Roof insulation, rooflight, maintenance need/cost	2
Maintainable surface (quantity, material, accessibility)	1
Building cleaning; inside&outside	2
Evaluation	2

**3405**

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	3
Green solutions (green roof, solar cell, rain water collection)	2
Outside walls/windows (isolation, sunless or sunlit)	4
The proportion of natural&artificial light, shading solution	5
Opening light (window)	5
Roof insulation, rooflight, maintenance need/cost	4
Maintainable surface (quantity, material, accessibility)	3
Building cleaning; inside&outside	3
Evaluation	4

**3759**

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	1
Green solutions (green roof, solar cell, rain water collection)	2
Outside walls/windows (isolation, sunless or sunlit)	3
The proportion of natural&artificial light, shading solution	3
Opening light (window)	2
Roof insulation, rooflight, maintenance need/cost	1
Maintainable surface (quantity, material, accessibility)	2
Building cleaning; inside&outside	1
Evaluation	2

**6418**

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	2
Green solutions (green roof, solar cell, rain water collection)	3
Outside walls/windows (isolation, sunless or sunlit)	2
The proportion of natural&artificial light, shading solution	3
Opening light (window)	2
Roof insulation, rooflight, maintenance need/cost	1
Maintainable surface (quantity, material, accessibility)	2
Building cleaning; inside&outside	1
Evaluation	2

**8210**

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	3
Green solutions (green roof, solar cell, rain water collection)	2
Outside walls/windows (isolation, sunless or sunlit)	3
The proportion of natural&artificial light, shading solution	2
Opening light (window)	4
Roof insulation, rooflight, maintenance need/cost	3
Maintainable surface (quantity, material, accessibility)	3

Building cleaning; inside&outside	4
Evaluation	3

**8591**

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	3
Green solutions (green roof, solar cell, rain water collection)	2
Outside walls/windows (isolation, sunless or sunlit)	3
The proportion of natural&artificial light, shading solution	2
Opening light (window)	4
Roof insulation, rooflight, maintenance need/cost	3
Maintainable surface (quantity, material, accessibility)	3
Building cleaning; inside&outside	4
Evaluation	3

**8603**

Evaluation Categories	
Building shape&siting (outside walls quantity, material)	2
Green solutions (green roof, solar cell, rain water collection)	1
Outside walls/windows (isolation, sunless or sunlit)	1
The proportion of natural&artificial light, shading solution	2
Opening light (window)	3
Roof insulation, rooflight, maintenance need/cost	2
Maintainable surface (quantity, material, accessibility)	3
Building cleaning; inside&outside	2
Evaluation	2

# 2. sz. Melléklet

A bírálati

sorszámokhoz tartozó

egyedi alfanumerikus

azonosítószámok

listája

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0476	GV9QUJRY
2564	Y7MBCPQA
3087	H4JFQCSZ
3405	LUA9SMHF
3759	VGKWQJX2
6418	2LMURNGP
8210	XMDSJ8CB
8591	2YESFKDZ
8603	HWLNDCGQ
9764	LXF4PWKE