TEAM CENTRAL - UCLA



LCFM	СМ	SE	SE	СМ	Α	MEP

SITE LOCATION



INTERSECTION OF COMMUNITIES



CONDITION ON SITE



CLIMATE CONDITIONS







55+ kph
55 kph
40 kph
30 kph
19 kph
16 kph
12 kph
7 kph
2 kph

SITE CHALLENGES & OPPORTUNITIES



CONNECTIONLA TRAFFICABUNDANCE OFDEEP WATEREARTHQUAKESUNLIGHTTABLE

THE LUNGS

7

EVA // HAN // MELISSA // ALEŠ // TAWA // NICOLAJ // BIRTHE

1st BIG IDEA - THE LUNG





LA: THE MOST POLLUTED CITY IN USA



OXYGEN TO CO² REVERSE?



 \square



MEDICAL CENTRE NEARBY



CONCEPT EVOLUTION





DOUBLE DIAMOND ON SITE SPLITTING BUILDING OPENING TOWARDS COMMUNITY INTRUDUCING GREEN ELEMENTS SHADING, FLOW AND VIEWS



9

ENCLOSING GARDEN



THE BUILDING TO LUNG FOR!









Α

SECTION THROUGH GARDEN







ROOF PLAN



NORTH



GROUND FLOOR



2 x Large Classroom

14

4 x Restroom

NORTH

- 2 x Handi. Restroom
- 2 x Emergency exit Technical Room

2 x Instructional Lab



VIEW IN THE GARDEN





FLOOR 1



Auditorium 6 x Study Room 2 x Restroom Handi. Restroom 2 x Emergency exit 6 x Faculty Office 2 x Senior Office Admin. Assist. Chair's Office Storage



FLOOR 2



- 4 x Small Classroom
- 6 x Student Office
- 3 x Seminar Room

Collaborative Space Auditorium

17

- 6 x Restroom
- 3 x Handicap. Restroom Emergency Exit

10 x Faculty Office Admin. Assist.



6 x Open Office



VIEW OF EDUCATIONAL WING







VIEW OF ADMINISTRATION WING







EDUCATIONAL ELEMENT - GIMMICK



EARTHQUAKE!!Fasten your seatbelts.



SITE CONDITIONS



BUILDING LOADS

Use	Uniform (psf)
Office	50
Classroom	40
Auditorium	100
Roof	40
Stairs	100
Corridors	100





STRUCTURAL SOLUTIONS

Steel Design

Concrete and Steel Design





STEEL - FLOOR 2



- Columns W12
 - BRBF A_core = 5 in^2
- Beams W12 typical 🛛 🗍
- Diagonal HSS

Slabs 3" concrete over 2" metal deck





Columns W12 T

- Beams W12 typical I
- Steel truss 3'

Slabs 3" concrete over 2" metal deck



STEEL - 3D SECTION CUTS





AUDITORIUM















STEEL - DETAILS





CONCRETE - FLOOR 2



Shear walls 12"
RC columns 18" x 18"
Steel columns W12 T
Steel beams W12 T
RC beams 18" x 14"
RC beams 18" x 12"
RC beams 18" x 18"





CONCRETE - ROOF



Shear walls 12"
RC columns 18" x 18"
Steel columns W12 I
Steel beams W12 I
RC beams 18" x 16"
RC beams 18" x 12"
Steel Truss 3'





CONCRETE - 3D SECTION CUTS















CONCRETE - DETAIL

- AAC (Autoclaved Aerated Concrete) light weight precast composite floor slab
- 30 % lighter




HVAC CONCEPT





OVERHEAD MIXING - GROUND FLOOR



- Supply duct
- Return duct
- O Vertical supply duct
- O Vertical return duct
- O Vertical inlet
- Vertical exhaust
 - MEP room



OVERHEAD MIXING - FLOORS 1 & 2



UFAD - GROUND FLOOR



- Supply duct

C Outline of plenum

Return duct

O Vertical supply duct

O Vertical return duct

○ Vertical inlet

○ Vertical exhaust

MEP room



UFAD - FLOORS 1 & 2



FLOOR SANDWICH



	Overhead	UFAD		
Cost	\$14.05/SF	\$14.51/SF		
GWP embodied	1.4%	1.3%		



STV - LUNG



SITE ACCESS







EQUIPMENT

	Concrete Pump	Unit	Technical Parameters
	BPL2525-5KVM39X	1	 Boom Length : 39m Max Concrete Output : 210 cubic vards / hour
ST DECHT RA	Excavator	Unit	Technical Parameters
	John Deere G250LC	1	 Max Digging Depth : 25ft. Arm Digging Force : 25,224–25,628 lb.
GROVE.	Mobile Crane	Unit	Technical Parameters
	Grove TMC540	1	 Max Lift Capacity : 40 ton Boom Length : 31m (+7.9~13.7m extension)
	Forklift	Unit	Technical Parameters
0.35	Caterpillar P6000-LE	1	 Max Lift Capacity : 6000 lb. Maximum Lift Height : 15.5 ft.
	Scissor Lift	Unit	Technical Parameters
CM	GS 3390RT	1	 Max Lift Capacity : 2500 lb. Maximum Working Height : 39ft.

SCHEDULE - LUNG STEEL

05/	03/2016		Pre 3 w	elimina veeks	aries	I	Str 23	Lun uctura weeks	ig - S I Frai	Steel me Co	Fram	e tion	Ea De 7 v	rly livery veeks			Fir 15	al Deli weeks	very			
Г					SI	tute	November	Decen	be I	January	February	1 March	T	Apri	Nay Nay	E I	line)ıh	August Sep			
Line	Name	Duration	Start	Finish	130 17	14 12	2015	15 £ 13 15	12 130 6	13 120 127	6 00 00 13	12 19 115 1	130 16	10 10 1	2020	1 21	6 15 12 12	6 13 120 12	ត្តមូលស្ត្			
					201	2021208	2812812612013	08 229 220 221	212 213 214	26 26 20 12	218 219 220 221	202 223 224 22	5 26 20	228 229 230	211 202 233	234 235	236 237 238 239	240 241 242 246	24 26 26 20 28 26		Ctort	00/20/2010
1	Pretiminary	28 20	30 Sep 19 /	A 15/10/2019					1/1/20		1			1							Sldfl	09/30/2019
2	Site clearance and survey	11	30 Sep 19 /	04/10/2019 /			1	1	12/14		1	1	1	И	1	11						
3	Fencing	40	07 Oct 19	10/10/2019	1		-		1212		2	4	1					_				
4	Site office, storage, Temporary water	3	11 Oct 19	15/10/2019	1	ы.	i	- i	120		i i	-i	1	11	1	11			- i - II			
-	(eeuroy							-	1212	2	1	+		1	1		-	-		1 r	Droliminarios	
5	Substructure	EM 30	16 Oct 19	29/11/2019			1		122		1	4	111							1	remmanes	10/15/2010
6	Excavation	20	16 Oct 19	29/10/2019	i	-	unn j	- i	1260	2	1	i i	1		1			- C	i 1			10/15/2019
7	Seting out	17	30 Oct 19	05/11/2019	1		1	1	1011		1	Т	1	1	1						completion	10/10/1015
8	Blind, screeds and tanking	11	DE Nov 19	12/11/2019	1		10	1. C	1080		12	4 ·	1	1							compiction	
9	Reinforced concrete foundation	2/	13 Nov 19	26/11/2019				- i	12/20	2	1	i.	1.1	1					1 N			
10	Bach 1	30	27 Nov 19	29/11/2019	1		1	10	EAR.	(T.	1	1	11	10	11						
11	Superstructure	14# 40	02 Dec 19	26/03/2020	1		10	12	10/20			-	-	N I	1	1.1		1	1 1			
12	Steel structure (Essenant Floor)	2	02 Dec 10	13122219*			1	12	10120		12			H I	1	11			1 1	C+	ructural framo	
13	Otael structure (Ground Boor)	34	16 Dec 10	17/04/2020*	i		1	1 1	1010	-	1/	T	Î	1	1	11			1	JL		$n_2/2c/2020$
14	Otest structure (1st floor)	24	20 Jan 20	07/02/2020 *		_	1	1	1212	24		1	1		1				1			03/26/2020
18	Ground-bearing (Datement) slab	202	10 740 2	2502/2020		-			1212			1		1	1						completion	,
16	Suspended state (Ground Floor)	2	21 740 22	1003/2020	li	_	1	1	1010	-	1 .	and some state of the local division of the	- î	1	i	11			1 1		completion	
17	Supported sigh (Int Rear)	242	11 10-2	2003/2020		-	1		120	2	1	-		11	1			-	1 8			
18	Infactor	17	27 Mar 25	24/06/2020		-		-	122		-	1 1	-	1			and the second	-				
10	Internet Disetational continue and	-		10052020		-	1		626				Lim					1	1			
-	Culture (Descent Final)					-	1		12/12/	2	1	÷	-		-	11			1	l Ine	strumental lah	
20	Comp (Service)	-				-	+	+	1214	2	1	+	-		-	digt.			1			01/20/2020
-	Centry (shound hoor)		14 Apr 24	2006/2020		-		+	1246		1	+	1	1		10.0			1		1 1.	04/28/2020
22	Centrg (1911009)		13 May 20	5406/5025		_	1		12112		-	-	11			311	-		-		delivery	
23	Deer instaliation	2	ti Jun 2	2406/2020		-	- 1		1414	-	1	4	11				21 L.				uchivery	
24	Poor finan		21 Apr 20	99062020	1	_	1		144		<u>i</u>	1	1	1 3		11	-1,		1			
25	snei	119	27 Mar 20	1//06/2020		_	- 1	-	1210	<u></u>		1	25	Ĥ -		11	_					
26	Roofing	4	27 Mar 22	27/64/2020*	L i	_			1414		1	4	28	11 .		11						
27	Estarlor Walls & Pacada	DV	27 Mar 20	03/062520*	1		1		102		10	1	27	14	-	1				۱ \ ۸	/hole huilding	
26	Curtain visil	3	27 Mar 20	0904/2020	1		- C 1		100		10	din .	10		1					V\		06/17/2020
29	Windows & Louins Installation	3	04 Jun 25	1706/2020			2		11/2		1	-		0		2	— ,				1	00/1//2020
30	Landscaping	42# 20	30 Oct 19	10/09/2020			30		1111		L			11	-		Contraction of the local division of the	The second s		1	completion	
31	External MEP work	41	30 Oct 19	26/11/2019	1		31		12/10/		12	1	1								completion	
32	Landscaping & Transplant	127	04 Jun 20	26/08/2020	1		1		1/22		1	1. C	1.1	1	1							
33	External finishes	20	27 Aug 20	10/09/2020			1		10.20				1.1	11	38				20			
1				der - a	1	1.000	1	1	1212		I.	1		1	10				1			
																					Landscaping completion	09/10/2020
	СМ																					

SCHEDULE- LUNG CONCRETE

47

AND A CONTRACT

05/03/2016		Pre 3 w	limina eeks	ries		Lung Structural 23 weeks	- Cond Frame	crete F Constru	rame	Early Delive 7 wee	ery ks	Fir 15	al Delivery weeks	3		
Line Name	Duration 2w 2d 01	Start Sep 19 A	Finish 17/09/2019	1 9000 12 19 11 137 138	12 13 199 1 200	Ucase November 2005 2005 30 7 14 72 78 74 72 78 1 200 200 204 205 206 207 208	1 December 5 2 6 16 23 1 209, 200, 211, 212, 22	30 6 10 120 31 24 125 126 12	27 ,3 ,18 ,17 ,24 ,2 7 ,258 ,229 ,228 ,220 ,222 ,3	Necti 19 135 123 130 15 23 1234 1225 1226 1227 12	Apri 12 - 28 28 - 28 - 2 12 12 12 12 12 12 12 12 12 1	201 74 71 18 75 7 1 21 72 723 724 725 72	June Juny 8 15 122 128 6 13 128 127 1 227 128 1 238 246 1 246 1 246 1 246 1 2 1	1 Aqus 13 130 137 1 94 126 126 120	Start	09/01/2019
Bechage B	4d 0 3d 1 6w3d 1 2w 1 1w 0 1w 0 2w 1	29 Dep 19 13 Dep 19 13 Dep 19 18 Dep 19 18 Dep 19 18 Dep 19 12 Oct 19 19 Oct 19 16 Oct 19	1209(2019 12/09(2019 17/09(2019 01/11/2019 01/10(2019 08/10(2019 15/10(2019 29/10(2019												Preliminaries completion	09/17/2019
Bacinti Superstructure General-barring (Dearment; sink Goneral-barring (Dearment; sink) Goneral-barring (Dearment; Roor) Goneral-barring (Dearment; Roor) Goneral-barring (Strate) Goneral-barring (Strate) Goneral-barring (Strate)	30 3 14W 20 0 2w 20 2w 3w 3w 3w 3w 2w	30 Oct 19 44 Nov 19 64 Nov 19 84 Dec 19 66 Jan 25 12 Jan 25 12 Jan 25	D1/11/2019 25/02/2020 19/1/2019 05/12/2019 07/0/2029 21/0/02/20 11/02/2029 25/0/2020												Structural frame completion	03/10/2020
Steel structure (1st Floor) Steel true incluision therior there incluises there inclu	2W 2 2N 2 12W 1 10v 1v 1v	25 Feb 20 25 Feb 20 11 Mar 20 11 Mar 20 11 Mar 20 25 Mar 20 21 Apr 25	10/03/2020 * 10/03/2020 08/06/2020 22/96/2020 16/96/2020 06/96/2020 06/96/2020 06/96/2020												Instrumental lab delivery	04/24/2020
20 Doer Installation 21 Proor Relative 22 Shell 23 Exciting 24 Exciting 25 Shell 26 Exciting 27 Shell 28 Exciting 29 Exciting the Exciting 20 Exciting the Exciting the Exciting 21 Exciting the Excing the Exciting the Excing the Excing the Exciting the E	2v 5v 11W 1 4v 2v 2v 2v 44W 0	26 Mary 20 17 Apr 20 11 Mar 20 11 Mar 20 11 Mar 20 11 Mar 20 11 Mar 20 18 Mary 20 12 Oct 19	09992225 22992225 01/05/2020 07/94/2020 19/04/2020 24/04/2020 24/04/2020 24/06/2020												Whole building completion	06/01/2020
 zuerna ister viðit Landscapig 5 Transplant Edemai finishes 	20 1 20 1	12 Oct 19 18 May 20 11 Aug 20	24/06/2029 24/06/2029				1 1 1								Landscaping completion	08/24/2020

SITE LOGISTICS



SITE LOGISTICS







Lung-Steel

Preliminaries completion	10/15/2019
Structural frame completion	03/26/2020
Instructional lab delivery	04/24/2020

COST ESTIMATE



ERICENTER

51

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2nd BIG IDEA - EPICENTER







EARTHQUAKE ZONE



LA: THE MOST DIVERSE CITY IN USA INTERSECTION OF COMMUNITIES



CONCEPT EVOLUTION



SHADING, FLOW AND VIEWS

PLACEMENT OF AIR-CLEANING FACADE

ADJUSTED TO CONTEXT POINTING TOWARDS COMMUNITY



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Α

THE BUILDING AT THE EPICENTER OF IT ALL!





ROOF PLAN







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Α

BASEMENT



VIEW OF ADMINISTRATION AREA





GROUND FLOOR





NORTH



VIEW OF LOBBY





Α

FLOOR 1



Α

3 x Small Classroom 2 x Student Office Seminar Room Auditorium

Collaborative Space

6 x Restroom 1 x Handicap. Restroom





VIEW OF ROOF TERRACE







AIR-CLEANING DOUBLE FACADE





AWARENESS DESIGN - GIMMICK



The facade cleans the air of every car that passes the building



STRUCTURAL SOLUTIONS





BASEMENT



CONCRETE - GROUND FLOOR





CONCRETE ROOF

- Steel diagonals W14 op
- RC columns 18'' x 18''
- Steel columns W16 oxdot
 - Steel beams W14 op
 - RC beams 18" x 18"

VERTICAL LOAD PATHS









STRUCTURAL ANALYSIS - CANTILEVER

- Adding vertical columns
- 31% displacement reduction





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STEEL - GROUND FLOOR





HVAC CONCEPT





UFAD - BASEMENT



- Supply duct
- C Outline of plenum
- Return duct
- Vertical supply ductVertical return duct
- O Vertical inlet
- O Vertical exhaust
 - MEP room



UFAD - FLOORS 1 & 2





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MEP

HYBRID VENTILATION CONCEPT





FLOOR SANDWICH



	UFAD	Hybrid
Air quality	Controlled	Uncertain
Cost	\$14.51/SF	\$14.51/SF
User control	Diffuser	Diffuser and window
System control	Standard	Complex



Radiant ceiling
Cooling, sprinkling, cable tray



STV - EPICENTER



SCHEDULE-EPICENTRE STEEL

05/03/2016		Pr 3	elir wee	ninar eks	ries			E Strue 22 w	pic ctur /eel	ent al Fi ks	ran	- Ste ne Co	el Fr	ctic	ne on		Earl Deli 8 w	ly iver eek	y s		Fin 15	nal E wee)elive eks	ery				
Line Name	Dura	tion St	at	Finish	51 130	October	1	November 2019 11 18 12 96 - 207 - 208 -	5 12 18	16 23	130 16 213 , 214	January 6 13 120 127 4, 215, 216, 217	Februa 13 (10 (17 218, 219, 720)	7 124 1 124 1	March	1 12 130 16 25 726 727	April 13 120 1228 1229 1	20 14 20 181	Hay 11 18 20, 20, 213, 2	1 25 11 18	June 15 12 17, 200, 20	129 16	104y 10 120 127 1.042.041.0	1 Aug 13 12 13 13 44 , 245 , 245	et 7 124 13 124 13	1 Sep 31 17 6, 349,		
1 Preliminary	2	2d 30 Se	D 19 A	15/10/2019					1	0	11	1 1 1 1	1				N.	19			1				B			
2 Site dearance and survey	-	1w 30 Se	p 19 A 0	04/10/2019 /			i		i.	6	11		i	-		1	1	iA	_	i		1		i i			Ctart	00/20/2010
3 Fencing	1	46 07 0	ct 19	10/10/2019	3		- İ		1	0	12		Ť.		_	1	1	11				1			1		Start	09/30/2019
4 Site office, storage, Temporar electricity	y water,	36 11 0	d 19	15/10/2019		2				ĺ																		
5 Substructure	Gw	3d 16 O	ct 19 2	29/11/2019 1		4			1								1											
6 Excavation		2w 16.0	d 19	29/10/2019		S see			+	- 0	421		+	_			1	- 11				-		-			Preliminaries	40450040
7 Seting out		1w 30 C	d 19	05/11/2019			1		-	- 2	44	<u> </u>	+	_			1	- 10							_			10/15/2019
8 Blind, screeds and tanking		1W 05 N	ov 19	12/11/2019		-	18	-	-	- 2	42		1	- 1			11	- 41				-		<u>. </u>	- 1		completion	
9 Reinforced concrete foundation	n	2W 13 N	ov 19	26/11/2019		_	1	3		- 2	14		+		-	+		- 44				1		1			•	
10 Backfill	1.60	36 27 N	OV 19	29/11/2019		-	- 1	10	-	- 2	12	-	-	_			1					-						
11 aupersouccure	148	30 020	1613	20100/2020					-	- 6	11	-	+	- 1	-	-+-	1					-		-	- 1			
12 Steel structure (General Floor)	-	20 020	NO 10	10122210-	Hi	1	- H		-	12	11		i -	_	_	1	1	- 14				1		i –	- 1		Structural frame	00/05/0000
14 Dieel structure (1st Floor)	_	4 10.3	m 22	06/02/2020 *			1		1	- 12	121	1			-	1	1		_			1					completion	03/25/2020
15 Ground-bearing (Dasement) sigh	2	20 87 5	ab 20	24802000						0	12			-			1	-11	_								completion	
16 Suspended slab (Ground Floor)		24 25 8	ab 20	09/03/2025	li		i		i	0	til	-	i	16	-	- i	1	ili		i		1		1			-	
17 Buspended slab (1st Roor)	2	25 10 M	lar 20	25/03/2025			1		1	0	121		1		្ទា		11	- 11				1		1	B			
18 Interior		2w 26 M	ar 20	23/06/2020		1				0	121	-	÷		-	18 Carlinson	-			-	-						Instrumental Jah	
19 Internal Plasterboard partition we		10w 25 M	ar 20	09/06/2025	1		1		1	0	11		1		1	11	-	-			۹.	1		E.	i		instrumental lab	01/28/2020
20 Celling (Busement floor)		3w 25 M	lar 20	17042025		2	1			1	12		4	- 8		20	in.	- 11				1		100			delivery	04/20/2020
21 Ceiling (Ground floor)		6w 00 A	pr 20	26/06/2025					1	1	444	h.,	4				1.			1.6				1.	1		uciiveiy	
22 Celling (1st floor)	3.3	6w 12 M	wy 20	2506/2025	1		1		1	N/	11	5	1			1	1	11	2	1	1	1		1	1			
25 Door Installation		24 10.3	un 20	2506/2025		12			1	0	121	5		-	-		19	11		2	— ,							
24 Floor finish		7w 20 A	pr 28	05/06/2025			1		1	12	34		1.		1		24				٩.,	1		1 m			Whole huilding	
25 Shell	1	1m 26 M	H 20	16/06/2020		1	1			1	11		1			25	14	111									whole building	06/21/2020
26 Rooting		44 25 8	ar 20	34/94/2520*			1		-	1	44		1		_	2	14	٦. 1						-			completion	00/21/2020
27 Exterior Halls & Facade		5w 25 M	ar 20	12062120*			1		1	9	14		1		_	II.		11				1					Sompletion	
25 Cutain wall	_	28 25 8	W 20	08/04/2025	11	1			1	1	11		-			28	-14	III										
20 Windows & Louvre Installation	-	24 53.3	an 20	1606/2028		-	-			- 12	42		i	_	_		11	11		8	+	-		i				
30 Landscaping	42	10 30 0	ct 19	03103/2020		-	-				13		+	-	-	- 1	1	-	_			+		1			Landscaping	
31 External MEP work		4M 30 0	ct 19	26/11/2019			3	1012010-0010			11	-	-	_	_		1	- 11					_				Lanacouping	09/09/2020
32 Landscaping & Transplant		24 03.0	un 20	2508/2020		-	1		1	- 6	12		1	-	_	-	6	11		7				1			completion	00,00,2020
as pexternal misnes		26 4	ug 20	09/09/2020	1		1		1		11	_	i i	-	-	1	1	11				1		i.	53		3011121011	



NESTIN NESTING

SCHEDULE-EPICENTRE CONCRETE

05/	03/2016		Pre 3 v	elimin veeks	aries			Epi Stru 26 w	ctu ctu	ntre ral Fr ks	- Co ame	Co	rete F nstruc	ram tion	le	Earl Deli 7 w	ly ivery eek:	y s		Fii 16	nal l 6 we	Deli eks	very			
Line	Name	Duratio	n Start	Finish	Argest 13 15 134 135	19 1 19	September 6 16 12 10 57 186 199 200	0doler 2019 17 114 121 201 202 1203 12	1 128 pt 94 1205 pt	November 11 18 25 26 27 28 1	1 Decen 12 (9 130 19 1210 1211	1212 213	January 16 13 120 1 224 125 126 120	1 Feb 20 j3 j30 7 j238 j229 j23	1127 (24 (2 117 (24 (2 11 (22) (22 (2	March 1 (16 (23) 2 (224) (25) (26	10 16 11 61 227 1 228	April 20 3 <u>1</u> 20 12 1 229 1 230	May 14 pt pt 201 pt pt pt	125 11 1241 281	June 18 (15 128 (120) 2	122 129 1)uk 6 [13]20 9 [26] 26 [26	1 August 27 13 10 19 81 244 1245 1246 1		
1	Preliminary	2w 2	d 15 Aug 18 A	02/08/2018		-	the second second	10000	:	all and the second	1.000	11		diam'r		-	: 8	1000	:	1:		1	A	1		
2	Site dearance and survey	1	w 15 Aug 19 A	21/08/2019 A		T	1	8			1	128		1			1		31			100		1		
3	Fencing	4	d 22 Aug 19	28/08/2019	1		Ē		1		Î.	121	10	21	1		1 1		1	11		1		1		00/00/0040
4	Site office, storage, Temporary water electricity	6 3	d 29 Aug 19	02/09/2019	-				i.		i –	128		i	- 1		1		1			1		1	Start	09/08/2019
5	Substructure	8w 3	d 03 Sep 19	17/10/2019 *		F			1		i i	24		1	1		1		10			1		1		
6	Evantion	,	a 03 Sep 19	16/09/2019			-		+		;	100				-	1		1	-	-			-		
7	Sethoout	1	17 Sep 19	23/09/2019			1	1	1			12		-	-		1 1					1				
8	Blind, screeds and tanking	1	a 24 Sep 19	30/09/2019					1		i –	120		1			1 11	_		11		1		1	Preliminaries	
9	Reinforced concrete foundation	2	DI Oct 19	14/10/2019							;	12.12	1	1		-	÷ 11	_	-	11			_	1	i reminanes	02/00/2010
10	Bachfil		d 15 Oct 19	17/10/2019			1	1	1		1	120	1	1	+		1 1		ii ii	11		1		1	completion	02/03/2013
11	Superstructure	144 2	18 Oof 19	10/02/2020			1		-	_	<u>. </u>	000	-	and the second second	1	-	1 11	_	1	11		1	_	1	Completion	
12	Ground-bearing (Desement) size	201	10 04 10	04112010					-		;	120		1	-	-	1		-			-		-		
10	Consists solume (Deservent Foor)	-	W BE Nov 10	10112010		1	1	-	12		1	120		1	1	-	1 1	_	1	11		1		1		
54	Suspended size (Ground Roor)	1	10 Nov 10	0912/2018		1		-	1		-	100		1	1	-	1 11			11		1	_	1		
15	Constate solume (Ground floor)		10 Dec 18	0601/2020			-		1	-	1 1	- 23		-	1	-	1	_				1		-	Structural frame	00/00/0000
15	Guispended sizb/1st Floort		er Jan 20	27/01/2020		1			1		1	121		1	1		1 1	_	I	11		T		1	1	03/09/2020
17	Constate solume (1st floor)		a 25 Jan 20	1002/2020		1			1.1		1	1221	1 1	Testing .		-	: 11	_	1	1.1		1		1	completion	
18	Steel structure (1st Floor)		w 11 Feb 20	08/03/2020 *								12					1									
19	Erection of steel column	2	w 11 Feb 20	24/02/2020				2	-			12		1 15			- 1		-			-		-		
20	Steel beam installation	2	w 25 Feb 20	09/03/2020		1		2	- 1		1	1230	2	1	2		• H	_	1	11		1		1	Instrumental lab	
21	Interior	12	w 10 Mar 20	06/08/2020		1			1		:	12	1	1			1		-	-	=	1			Instrumentariab	04/22/2020
22	Internal Plants-found partition well	1	10 Mar 20	2100/2020							1	128	1			-	in the second se	-		-				1	ب معامله	04/23/2020
23	Celling (Desement foor)		w 10 Mar 28	1504/2020		1			1		1	124		1	1		- 11	1	II.	11		1	_	1	delivery	
24	Celling (Ground floor)	1	24 Mar 20	07/04/2020		1	1	2	1		1	V.S.	2	1	1	2	-		11.			1		1	1 1	
25	Celling (fat floor)		a SApr 20	06/06/2020					1	-	1	120	8	1	-		1	3			-					
3	Coor installation		w 22 May 20	05/06/2020		T	1		T	-	1	120	2	1	1		1 1		1 3	1-	=	1	-	1	1	
77	Floor finish	1	16 Apr 20	2106/2020		1			1		1	128	8	1	1		12		*					1	1 Whole building	
28	Shell	11	w 10 Mar 20	29/05/2020				2	1		1	12P	1	1			1 1	-	1	-		1	-	1		05/23/2020
25	Roofing	1	10 Mar 20	00040300*		1	Í		1		1	120	2	1		8	-		1	1		1		1	1 completion	
30	Estantion Wells & Facada		10 Mar 20	54062320*	H	1			1		1	1/22	20	1				_				1		1		
21	Curtain well		10 Mar 20	23/05/2020				8				12	1				1									
12	Windows & Louvie Installation		W 16 May 20	29/06/2020		1		1	1		1	124	2	1	1		1 1		1 1	-A		1		1		
33	Landsoaping	48	w 17 Sep 19	21/08/2020		1	D	-	-		-	120	1		_	_	- 11	_		-		-		-		
34	External MEP work	4	a 17 Sep 19	14/10/2019			34 00000000000				1	Vil	2				1								1 Lanuscaping	00/01/0000
35	Landscaping & Transplant	12	w 15 May 20	07/08/2020		1	1	6	1		1	128	8	1	1		1 11		1 2						08/21/20	
36	External finishes	2	10 Aug 20	21/08/2020	H H		1	1	1	10	1	124	2	1			И		-11	1.				1.2	completion	
						1	i.	1	1		1	100	1	1	1		1 1		1	1		1			· ·	
	СМ																								•	

SITE LOGISTICS





Epicentre-Concrete

Preliminaries completion	09/02/2019
Structural frame completion	03/26/2020
Instructional lab delivery	04/23/2020



COST ESTIMATE



THE LUNGS EVA// HAN // MELISSA // ALES // TAWA // NICOLAJ // BIRTHE

EVA // HAN // MELISSA // ALES // TAWA7/ NICOLAJ // BIRTHE

ERICENTER

AIR QUALITY CHALLENGE



THE LUNG Outside in



THE EPICENTER Outside out



CONSTRUCTION COST COMPARISON



Construction Cost Comparison



Updated TVD



QUALITATIVE RISK ANALYSIS

				PROBABILITY									
	Ris	sk A	ssessment Matrix	Frequency of Occurrence Over Time									
				А	В	С	D						
				Likely	Probable	Мау	Unlikely						
		I	Project Failure	0	1	2	3						
RITY		11	Degraded Project	1	2	3	4						
SEVER			Impact to Project objectives	2	3	4	5						
		IV	Little impact to project	3	4	5	6						



QUALITATIVE RISK ANALYSIS

	Steel	Concrete	Steel	Concrete
Material Procurement	C,II	C, III	B,II	B,III
Construction Cost	B,II	B,II	B, III	B, III
Constructability & Delays	B, II	B,II	C, III	C, III
Occupancy Delays	C,III	D,III	C,III	D,III
Accidents	D,III	D,III	C, III	C,III
Points	16	18	17	19

ADDITIONAL CONSTRUCTION PLANS



Pull Planning



Collaboration



Sustainability



4D & 5D Technology



Safety Walks





LIFE CYCLE COST



ADDITIONAL INCOME



Green Cafe

Rent the auditorium to public





TARGET RENT - LUNG STEEL



TARGET RENT - LUNG CONCRETE



TARGET RENT - EPICENTER STEEL



TARGET RENT - EPICENTER CONCRETE



SUMMARY

	Steel	Concrete	Steel	Concrete
Construction time	48 weeks	48 weeks	48 weeks	51 weeks
Early Occupancy Date	April 28	April 24	April 28	April 23
Construction risk	16	18	17	19
Construction cost	\$9,300,000	\$9,500,000	\$9,000,000	\$9,200,000
GWP	113%	117%	112%	116%
Energy (MJ) 50 years	107,114,158	109,216,392	104,645,905	106,378,151
Water (kgH ₂ O-eq) 50 years	396,805,056	400,207,452	401,373,496	404,714,683
Life cycle cost	\$432,000	\$423,000	\$375,000	\$375,200
Rent	\$885,000	\$895,000	\$820,000	\$830,000

CRITERIA FOR DECISION MATRIX



TEAM

DECISION MATRIX



WINNER





WINNER





101

TEAM

COMMUNICATION

Central ~

File Edit View Window Help

No Emails!

\$ slack

Google Drive

Slack - Central

- # a_e_mep arch struct

DIRECT MESSAGES (9)

- alesjamsek

- nicolaj







dr Like Comment A Share



family and teammates





COORDINATION | COLLABORATION







103

TEAM

COORDINATION | COLLABORATION



COORDINATION | COLLABORATION





TEAM PROCESS - LESSONS LEARNED

Team Process Example: Peer Review

• Issue

- no designated person to submit
- delayed response in Slack
- Conflict Resolution
 - team meeting agenda item
 - listen to each perspective
 - brainstorm solutions

• Solution

- new role = submission lead
- thumbs up





TEAM

THANK YOU!

