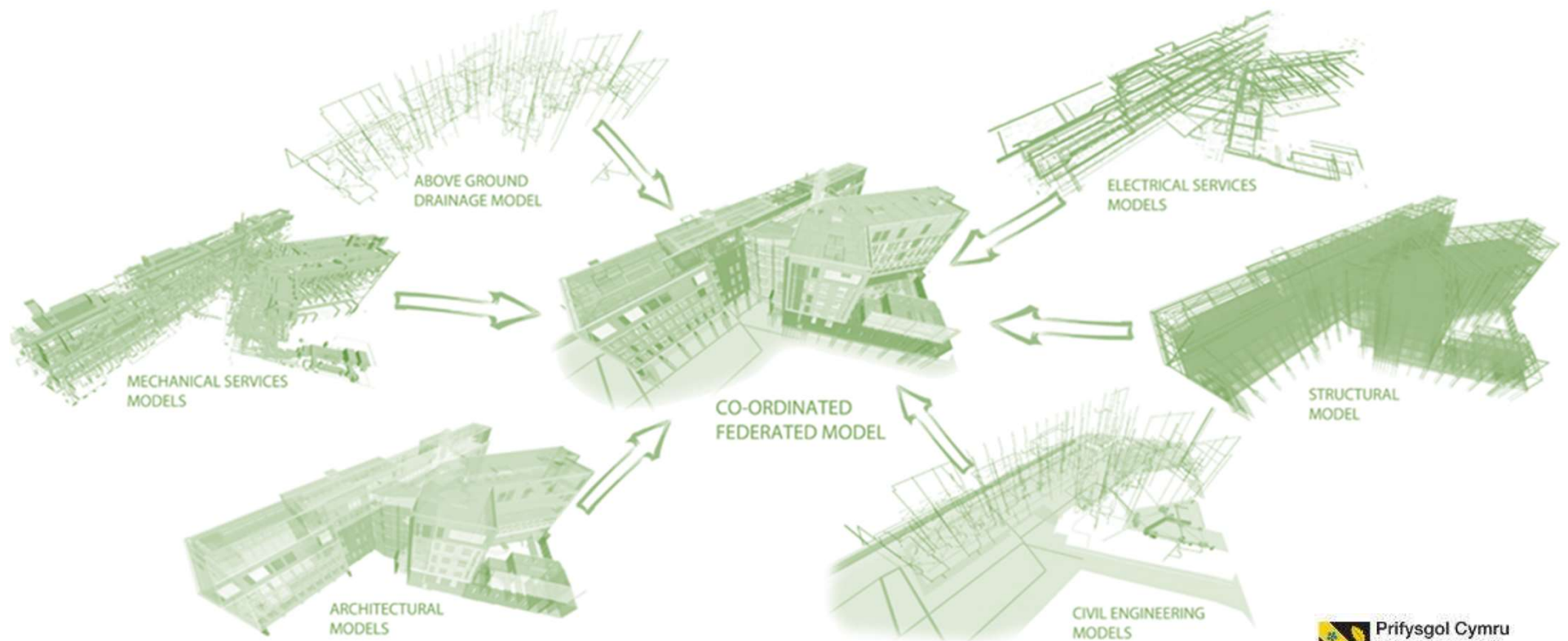


Building Information Modelling



www.onecreativeenvironment.com

- Assessment
- School Design (example)



Assessment 2

Submission
deadline:

29th April 2025

Module Learning Outcomes (from module syllabus)

Learning Outcomes:

- demonstrate an ability to analyse, classify and produce 2D and 3D drawings using industry-standard software applications;
- demonstrate an ability to render drawings to various scales and media and export drawings to different formats;

Assessment 2

Submission
deadline:

29th April 2025

Scenario: **Federated Model**

You have been commissioned by Merthyr County Council as lead consultant in the of delivery of a 'state of the art' Welsh medium infant school and adjoining community hall. The project is a joint funded venture with the Welsh Government, under the Sustainable Communities for Learning Programme and is required to meet the appropriate standard of BIM maturity.

Prepare a federated concept Model at RIBA stage One for your first Information Exchange with the client. Your federated model shall consist of architectural and structural models that are linked in Revit using given shared coordinates.

The design and construction of the school and community hall should be inspiring to create a vibrant facility for the pupils and wider community.

The schedule of accommodation shall be in accordance with BB99 with additional facilities as indicated.

Assessment 2

Submission
deadline:

29th April 2025

Digital Submission:

Architectural Model with Architectural drawings:

- Site location plan
- Existing site plan and demolition
- Works plan
- Proposed General arrangement floor plan.
- Proposed Principal elevations
- Proposed Long and Short Section
- Proposed Visualisations

Structural Model with Structural Drawings:

- Foundations Plan
- Primary Structure Plan
- Structural Visualisation

Excel Document:

Multicategory Material Take off

The project **must** include. Project Base point, survey point. True North/ Project North, Room names, Legends, Tags & Annotations, Dimensions, Levels, North Point.

All Drawings must be appropriately scaled at A1 size and presented in the uwtsd BIM titleblock format with the appropriate naming conventions for all sheets and models.

Digital Submission required in RVT and PDF format.

PDF to be uploaded to Turnitin with RVT links sent to the tutor.

Assessment 2

Submission
deadline:

29th April 2025

Assumptions:

Project Number: 5016

Project Title: Ysgol Clasdir

1 form entry infant school for 90 pupils.

48 PT Nursery Provision and Ty Joseph Parry Community Hall

The site plan below shows the proposed location of the school and the redundant terminus building on the site is to be demolished.

The school is to be single storey though the school hall space and adjoining community hall should be double height.

Schedule of accommodation at BB99 opposite (blue column)

Additional Accommodation:

Nursery, incl toilets, store & staff area: 100m²

Ty Joseph Parry: Hall 125m², Office 10m², store 15m², Café & Kitchen 25m², 2 x Accessible WCs

Each classroom should have access to the outside.

Car parking for 10 vehicles including 2 disabled bays

Drop off point for deliveries and minibuses.

Hard surface playground & MUGA

Soft landscaped playground & Forest school

pupil places number of classes Forms of Entry (FE) and type			90 pupils 3 classes 1 FE infants	
	max. group size	average area (m ²)	no. of rooms	total area (m ²)
basic teaching				
reception class	30	66	1	66
infant classbase	30	60	2	120
junior classbase	30	60		
specialist practical				
food/science/D&T	8	24	1	24
food/science/D&T	8	38		
ICT/ group room: (no. of computers)			(8)	38
ICT suite: (no. of computers)				
halls				
main hall (used for dining)	30		1	125
small hall	30	80		
studio	30	50		
learning resource areas				
Library resource centre	15 to 30		1	18
small group room (SENco)	5 to 8	12	1	12
small group rooms	5 to 8	9		
TOTAL TEACHING AREA				403
staff and admin.				
head's office/meeting room			1	10
senior management offices		8		
staff room			1	18
general office			1	8
sick bay (adjacent)		3	1	3
entrance/reception			1	2
copier/reprographics				2
SENco/Mi/group room		12	1	12
interview/social services		8		
storage				
class storage (reception)		3	1	3
class storage (infant and junior)		1.5	2	3
specialist stores		6 or 8	2	12
PE store (adjacent to hall)		12	1	12
PE store (external)		4	1	4
non-teaching storage				
central stock		8	1	6
cloakrooms/lunch box storage		3		9
dining chair/table store (no. of sittings)			(2)	7
staging/appliance store				1
community store		4	1	4
crafts/repair store			1	4
cleaner's store		1.5	2	3
TOTAL NET AREA				529
recommended net area				529
non-net area				
kitchen (full-service)			1	28
servery				5
toilets (and personal care)				
reception toilets			2	8
other pupil toilets				10
accessible toilets/hygiene facilities				7
staff toilets				3.5
circulation				
plant (incl. server)		net x 23%		122
partitions		net x 3%		17
		net x 5%		26
TOTAL GROSS AREA				757
recommended gross area (net at 70% of gross)				756

Assessment 2

Submission
deadline:

29th April 2025

Assessment 2 (Revit Practical)

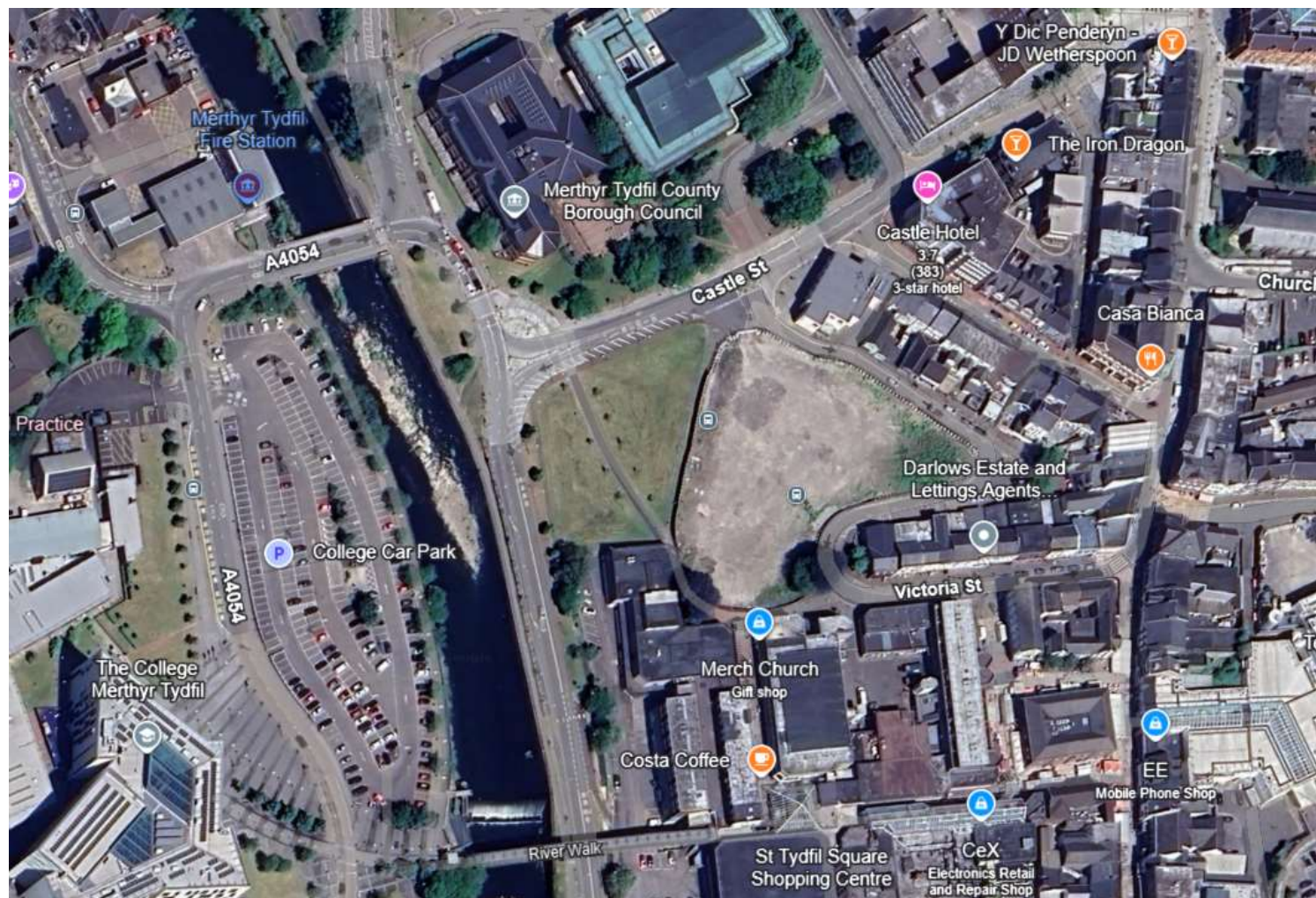
• Use of the BIM naming and format, including completion of splash page and all titleblocks. Revit Link files interlinked	20
• Demonstrating skills in Revit, and organise your work accordingly – views and sheets, PDF outputs	20
• Drawings provided at an appropriate scale, detail and presentation format.	25
• Project Base point, Survey Point. True North / Project North, Room names, Legends, Tags & Annotations, Dimensions, Levels, North Point. Project Phasing	25
• Adherence to brief and Design intent. In accordance with the requirements in the brief and BB99 table.	10

4. Practical Application Skills

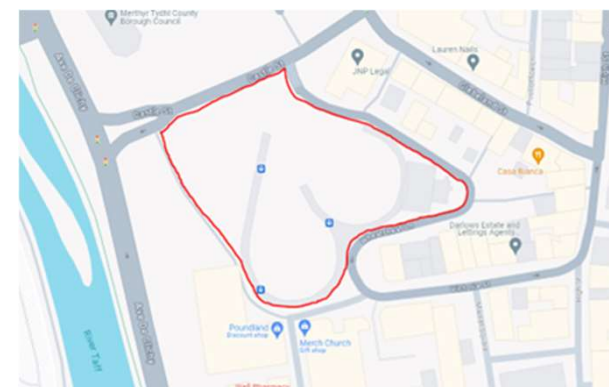
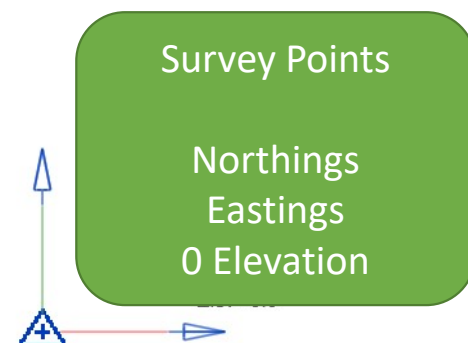
100



The Site



Google Earth



The Brief

			90 pupils 3 classes 1 FE infants	
	max. group size	average area (m ²)	no. of rooms	total area (m ²)
basic teaching				
reception class	30	66	1	66
infant classbase	30	60	2	120
junior classbase	30	60		
specialist practical				
food/science/D&T	8	24	1	24
food/science/D&T	8	38		
ICT/ group room: (no. of computers)				
ICT suite: (no. of computers)			(8)	38
halls				
main hall (used for dining)	30		1	125
small hall	30	80		
studio	30	50		
learning resource areas				
Library resource centre	15 to 30		1	18
small group room (SENco)	5 to 8	12	1	12
small group rooms	5 to 8	9		
TOTAL TEACHING AREA				403
staff and admin.				
head's office/meeting room			1	10
senior management offices		8		
staff room			1	18
general office			1	8
sick bay (adjacent)		3	1	3
entrance/reception			1	2
copier/reprographics				2
SENco/MI/group room		12	1	12
interview/social services		8		

storage

class storage (reception)	3	1	3
class storage (infant and junior)	1.5	2	3
specialist stores	6 or 8	2	12
PE store (adjacent to hall)	12	1	12
PE store (external)	4	1	4
non-teaching storage			
central stock	8	1	6
cloakrooms/lunch box storage	3		9
dining chair/table store (no. of sittings)		(2)	7
staging/appliance store		1	4
community store	4	1	4
caretakers /maintenance store		1	4
cleaner's store	1.5	2	3
TOTAL NET AREA			529
recommended net area			529
non-net area			
kitchen (full-service)		1	28
servery			6
toilets (and personal care)			
reception toilets		2	8
other pupil toilets			10
accessible toilets/hygiene facilities			7
staff toilets			3.5
circulation	net x 23%		122
plant (incl. server)	net x 3%		17
partitions	net x 5%		26
TOTAL GROSS AREA			757
recommended gross area (net at 70% of gross)			756

Design

[Sustainable Communities for Learning: building bulletins | GOV.WALES](#)

GUIDANCE

Sustainable Communities for Learning: building bulletins

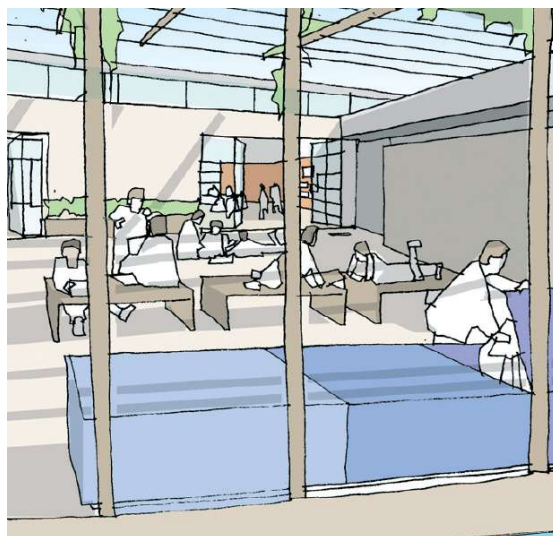
Guidance for the design and maintenance of school buildings and land.

[Read details](#) ∞

Part of: [Sustainable Communities for Learning Programme](#)

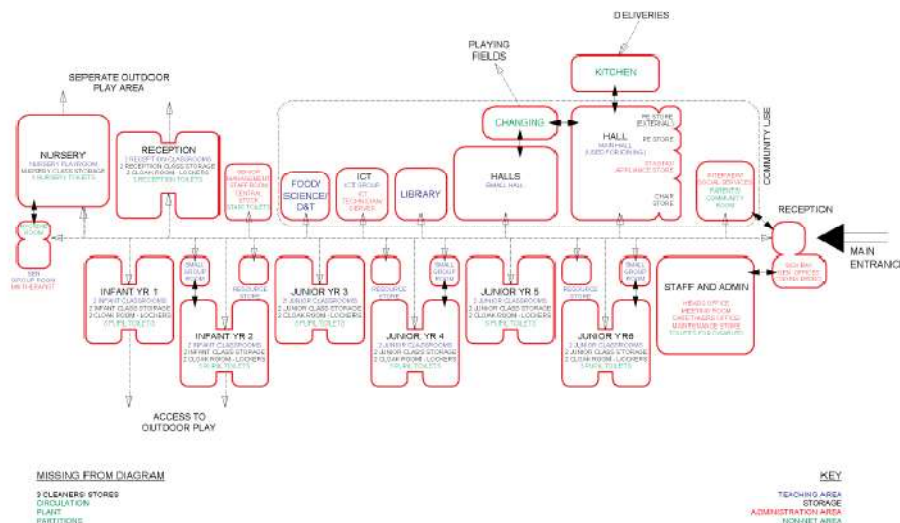
First published: 19 June 2019

Last updated: 27 January 2022

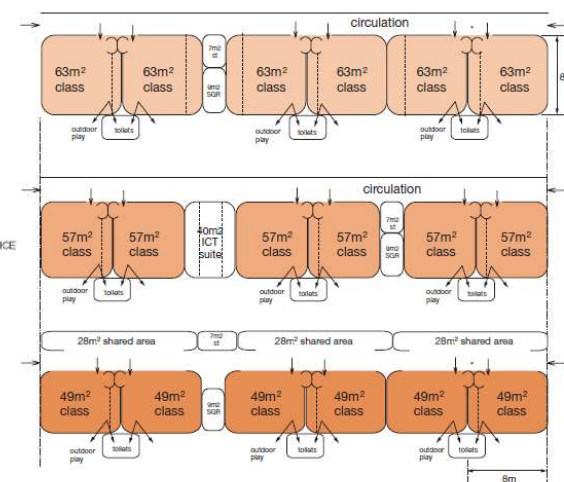


Building Bulletin 99:
Briefing Framework for
Primary School Projects

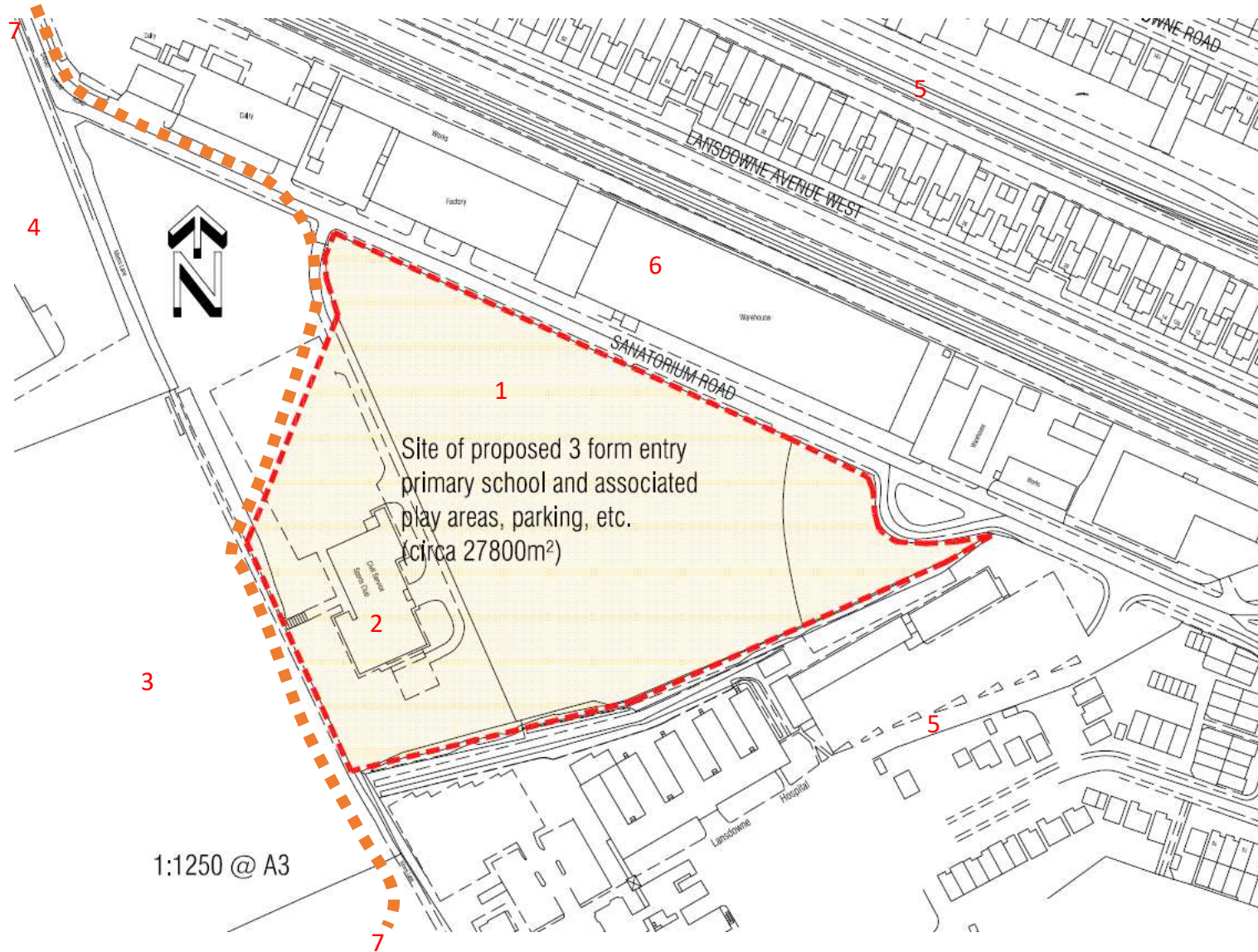
Incorporating primary school revision to
BB82: Area Guidelines for Schools



PRIMARY EXEMPLAR CORE BRIEF DIAGRAM



Site and Context:



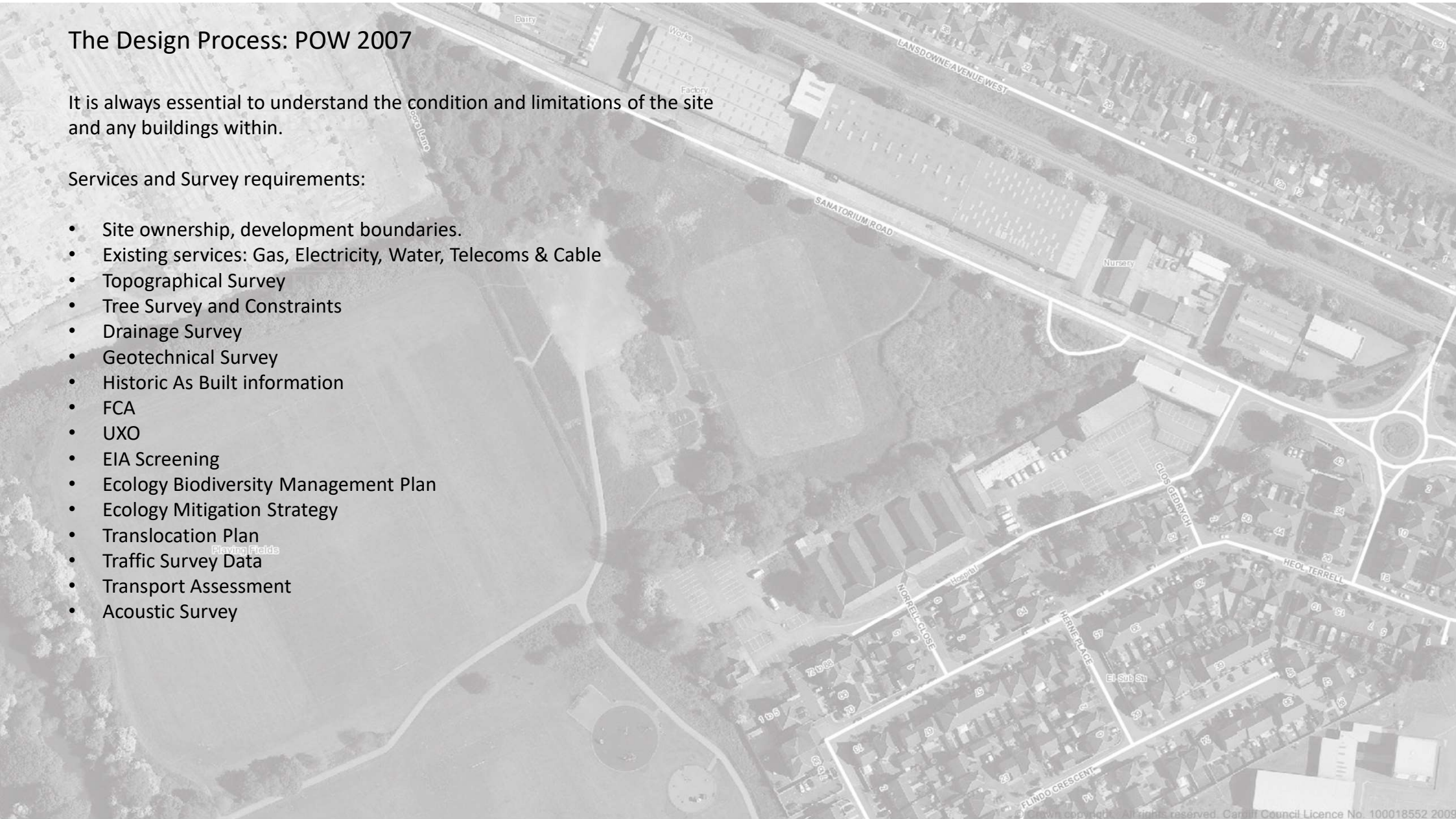
1. Site of former football pitch
2. Location of demolished Sports Club
3. Adjacent Rugby pitches
4. Ely Mill (future residential site)
5. Existing residential development
6. Industrial units
7. Ely trail public right of way.

The Design Process: POW 2007

It is always essential to understand the condition and limitations of the site and any buildings within.

Services and Survey requirements:

- Site ownership, development boundaries.
- Existing services: Gas, Electricity, Water, Telecoms & Cable
- Topographical Survey
- Tree Survey and Constraints
- Drainage Survey
- Geotechnical Survey
- Historic As Built information
- FCA
- UXO
- EIA Screening
- Ecology Biodiversity Management Plan
- Ecology Mitigation Strategy
- Translocation Plan
- Traffic Survey Data
- Transport Assessment
- Acoustic Survey





Design Challenges:

- Limitations to the Site
- Drainage
- Ecology
- Japanese Knotweed



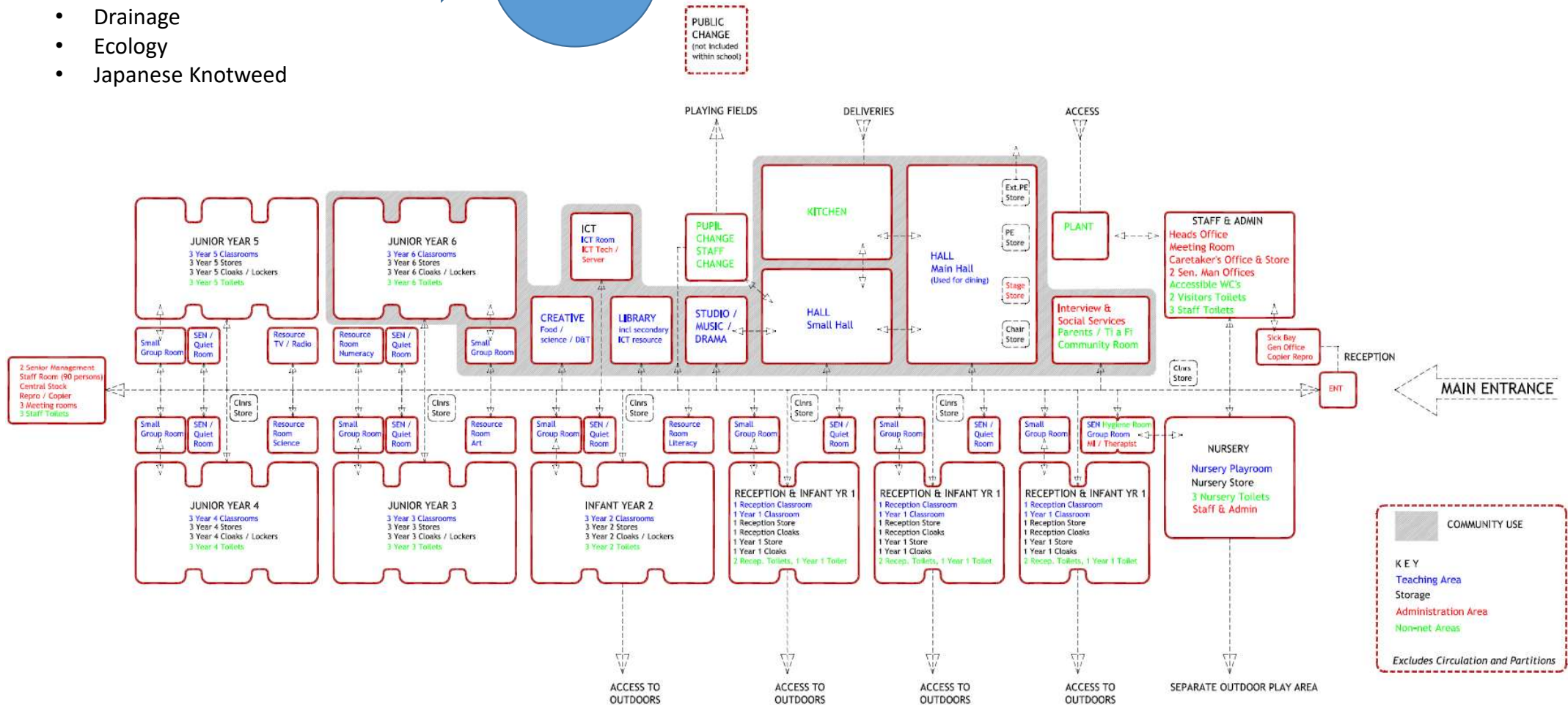
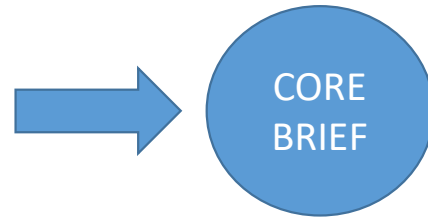
AREA BRIEF

	max. group size	average area (m ²)	number of rooms	Total area for each type of space					
				basic teaching	learning resources	teaching storage	other storage	staff & admin.	supplementary
Reception	30	66	3	198			9		
Reception class		3	3						
Class storage		3	3						
cloakrooms/ lunch box storage		3.5	6						21
Reception toilets									
Infant Y1	30	60	3	180			4.5		
Infant classbase		1.5	3			8			
Class storage	6 to 8	8	1					9	
Small group room		3	3						
cloakrooms		4	3						
Infant Y2	30	60	3	180			4.5		
Infant classbase		1.5	3				8		
Class storage		8	1					9	
specialist store: literacy		3	3						
cloakrooms		4	3						
Pupil toilets									
Junior Y3									

Room	Area (m ²)	Volume (m ³)	Notes
Reception	198	198	
Reception class	198	198	
Class storage	198	198	
cloakrooms/ lunch box storage	198	198	
Reception toilets	198	198	
Infant Y1	180	180	
Infant classbase	180	180	
Class storage	180	180	
Small group room	180	180	
cloakrooms	180	180	
Pupil toilets	180	180	
Infant Y2	180	180	
Infant classbase	180	180	
Class storage	180	180	
specialist store: literacy	180	180	
cloakrooms	180	180	
Pupil toilets	180	180	
Junior Y3	180	180	

Design Challenges:

- Limitations to the Site
- Drainage
- Ecology
- Japanese Knotweed

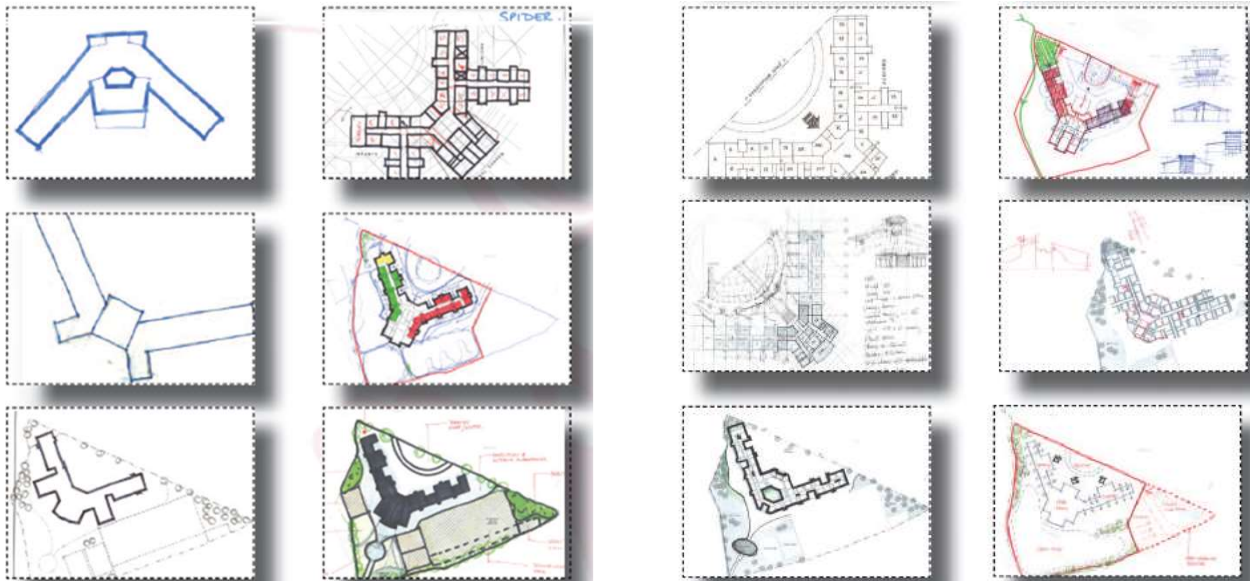


Design Challenges:

- Limitations to the Site
- Drainage
- Ecology
- Japanese Knotweed



BRIEF &
CONCEPT



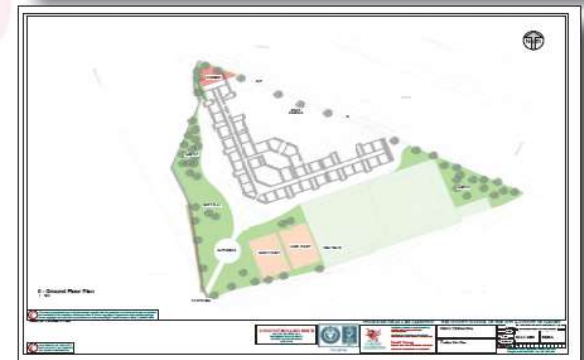
Wings



Spider

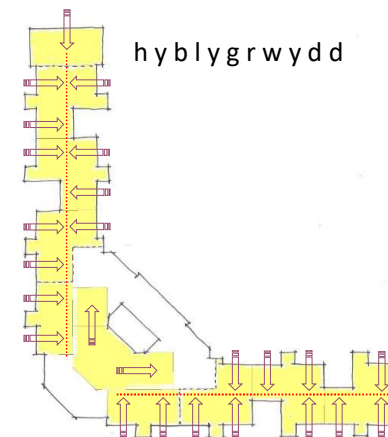
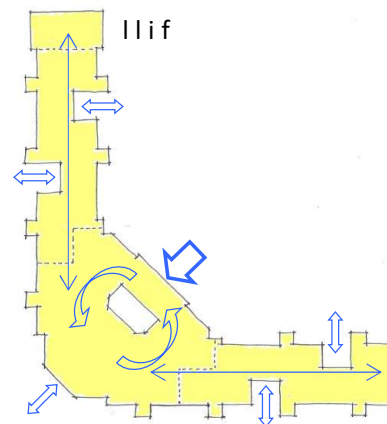
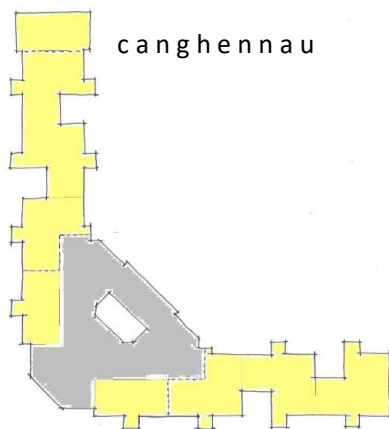
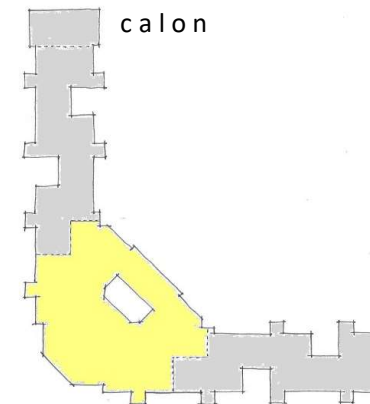
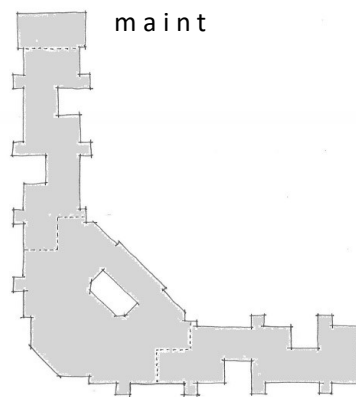
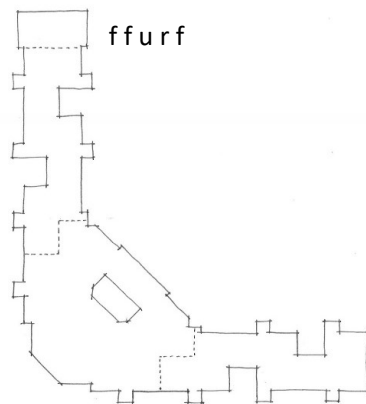


Stealth

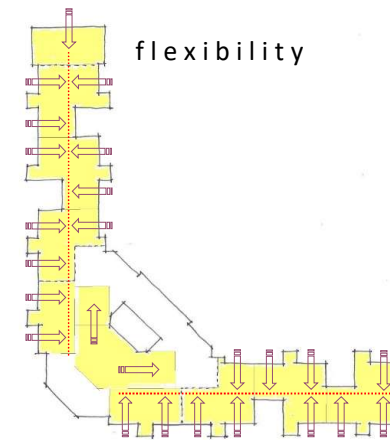
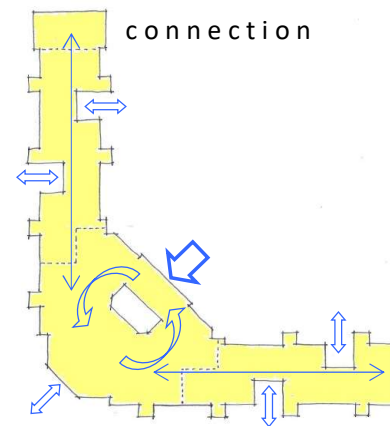
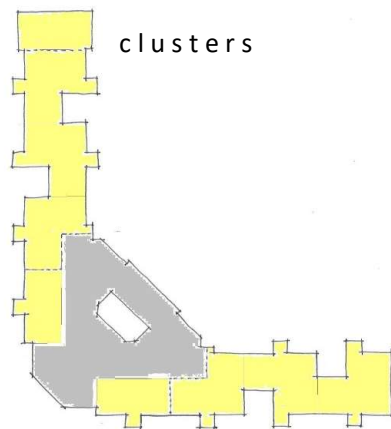
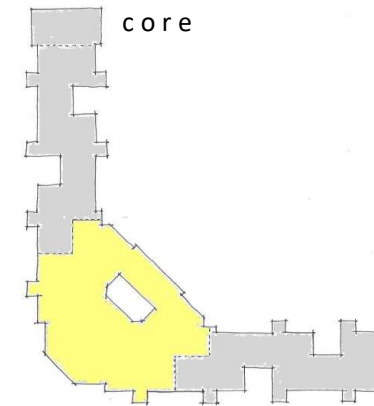
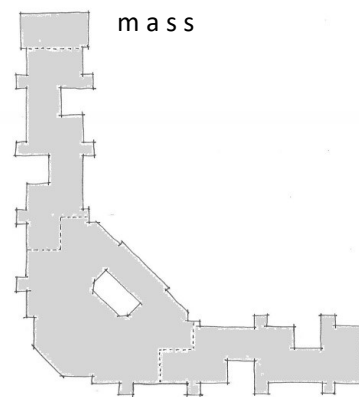
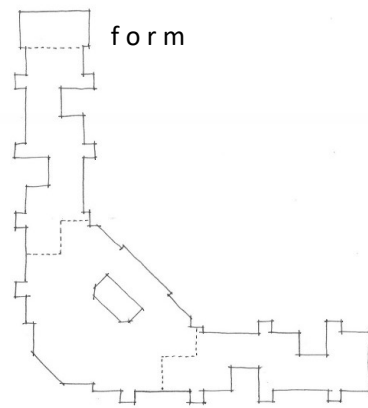




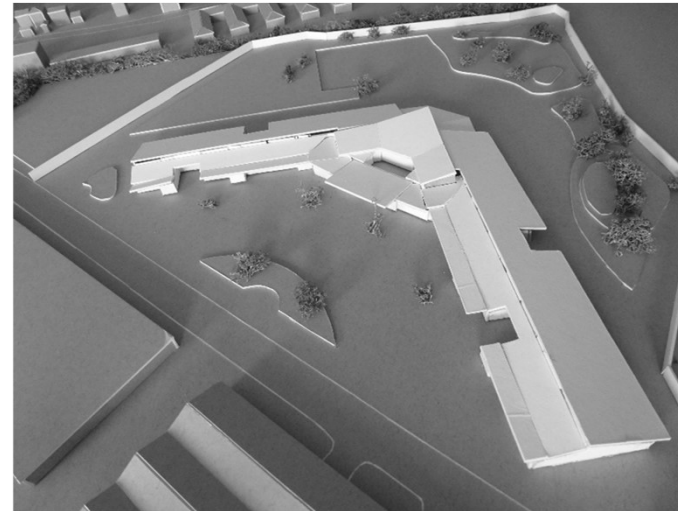
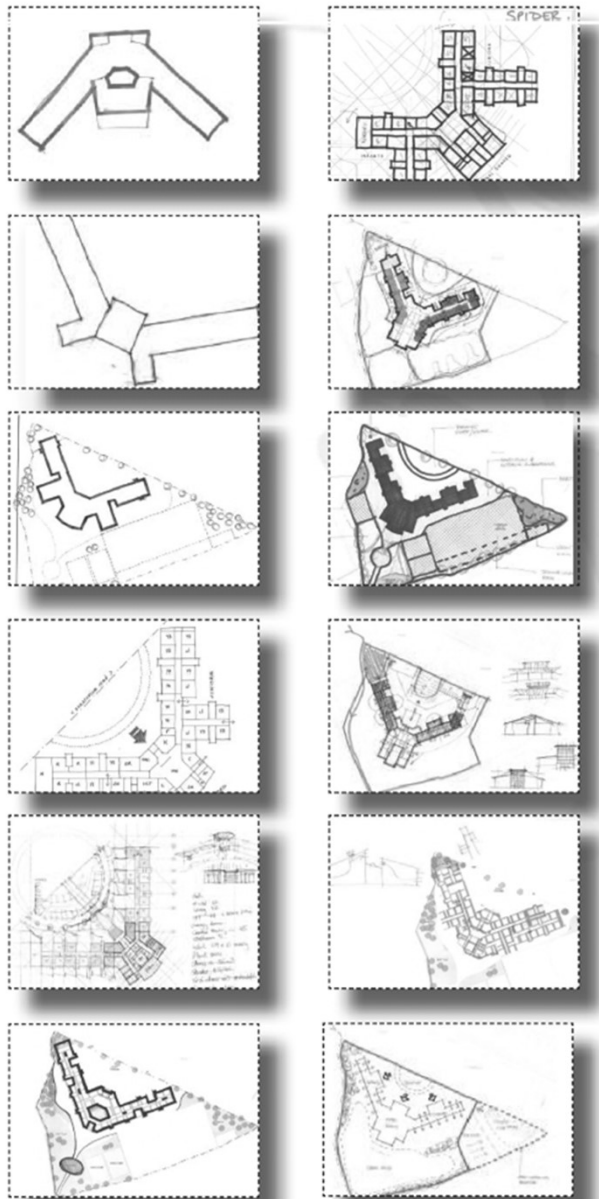
0 - Ground Floor Plan
1 : 500



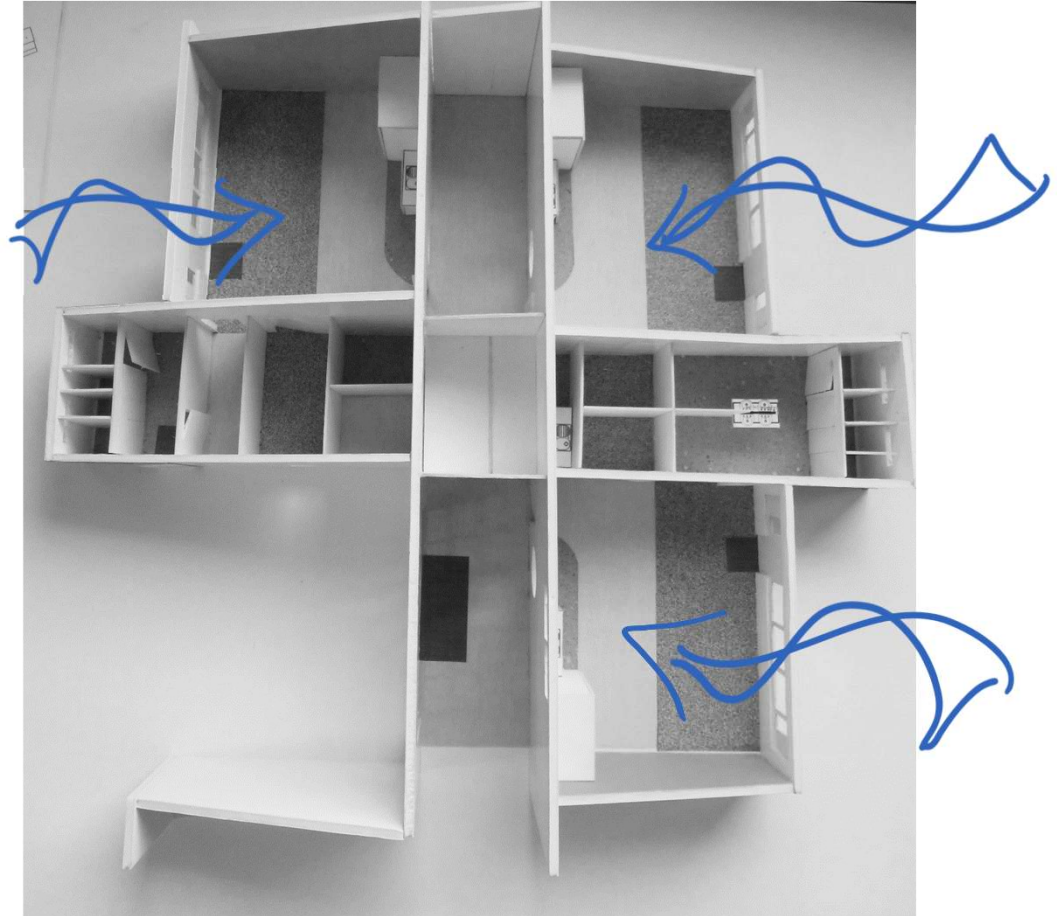
Ysgol Treganna: brasluniau cysyniadol



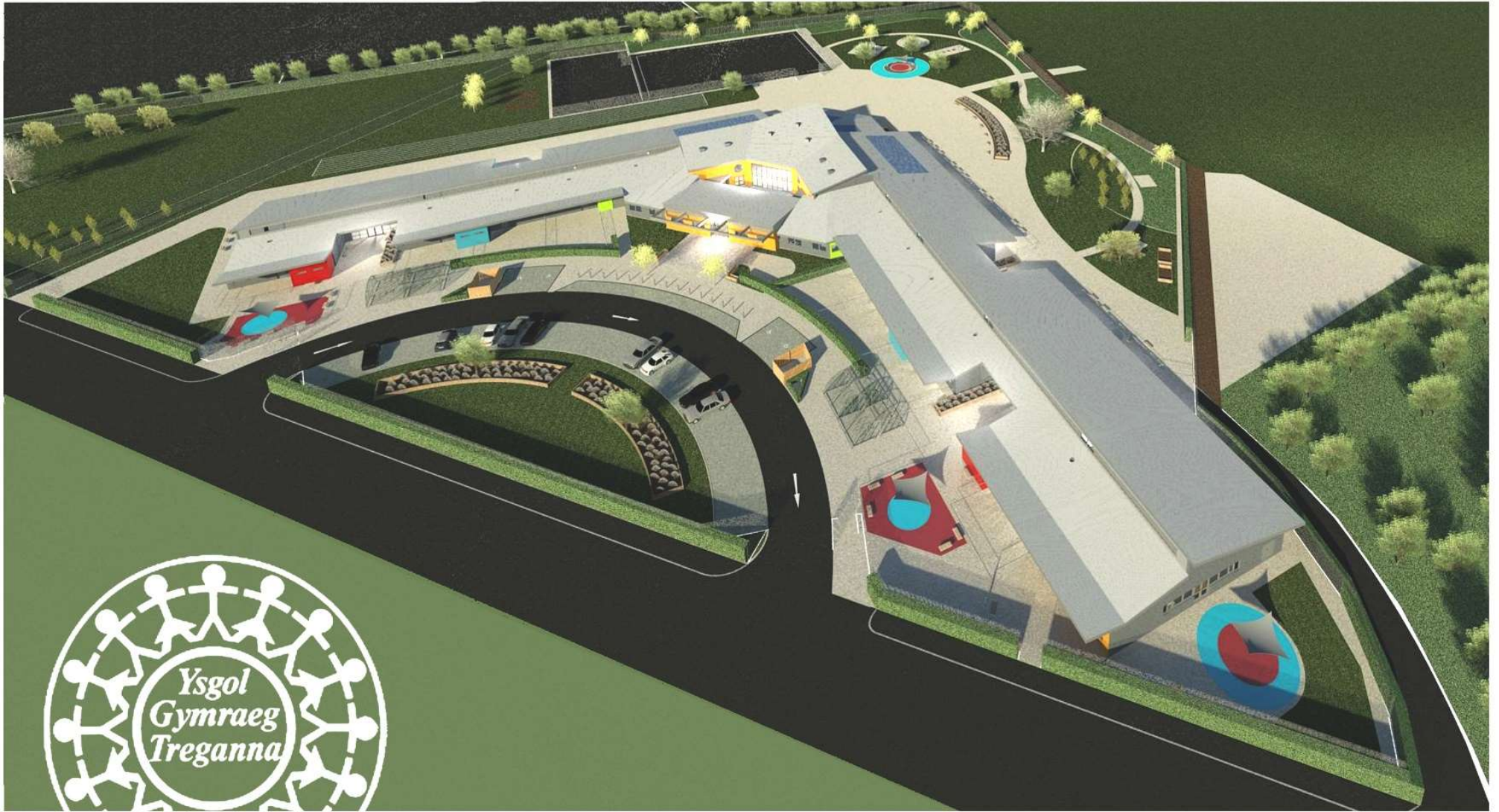
Ysgol Treganna: concept sketches

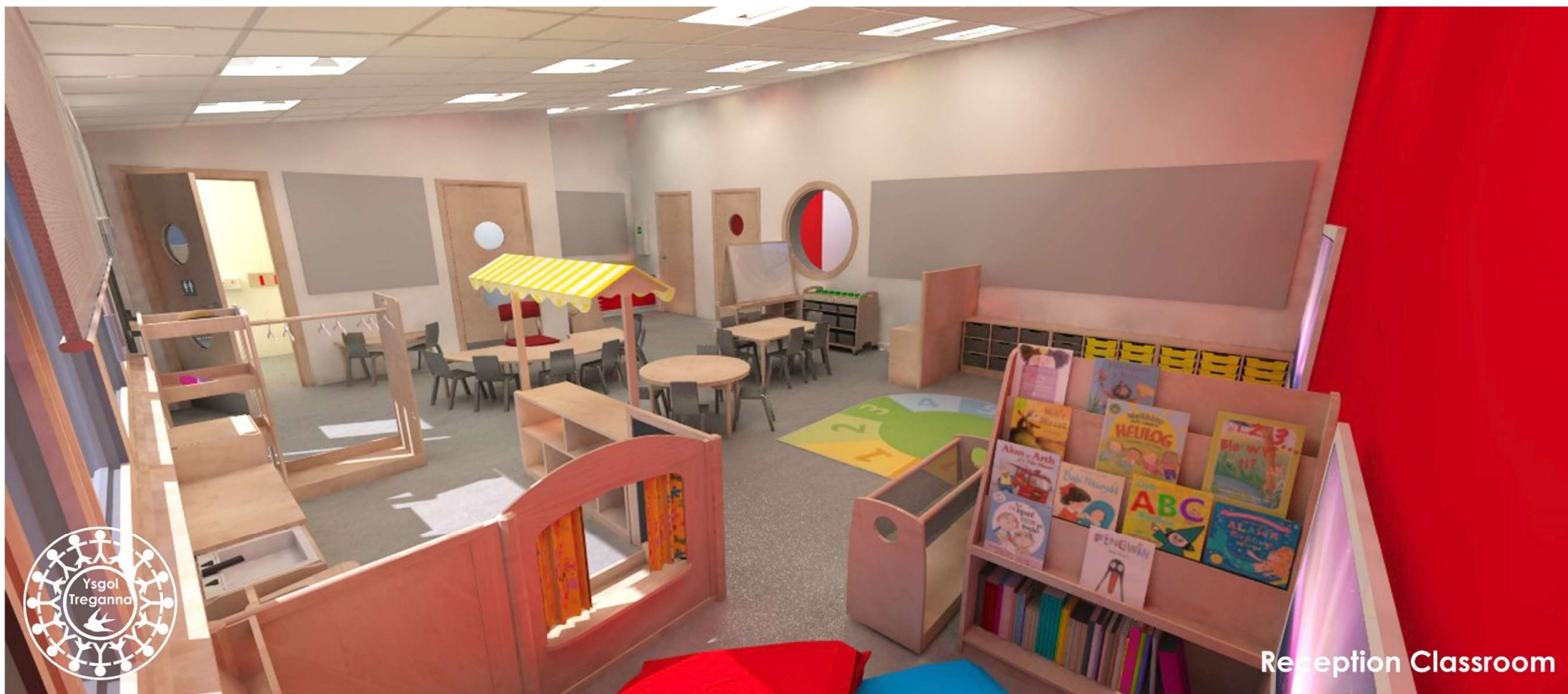


Ysgol Treganna: development sketches & models

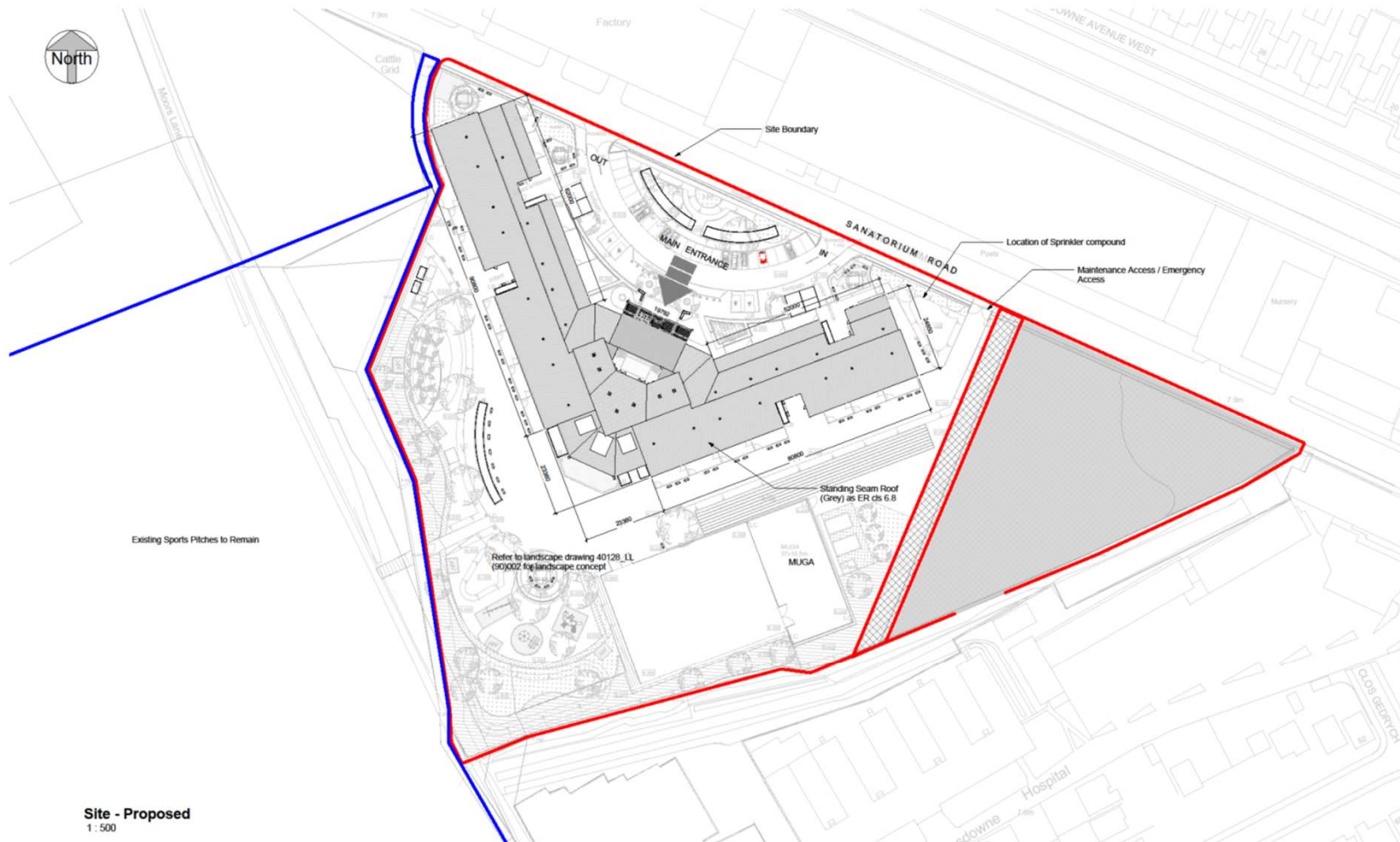


The Design Section became critical in realising the strategy for natural lighting, natural ventilation and distribution of services.









Site - Proposed
1 : 500

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TENDER ISSUE

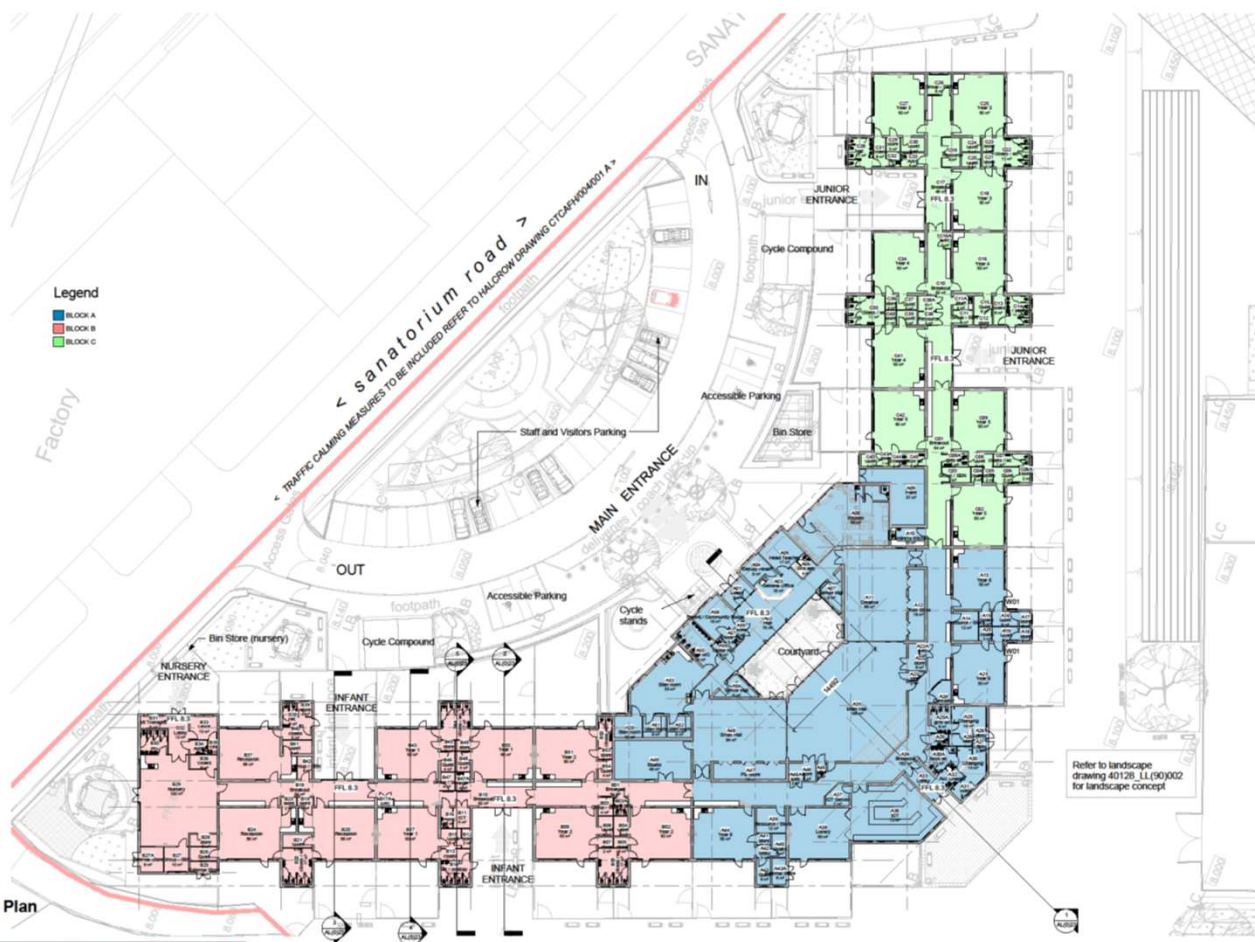


CYNGOR SIR DINAS A SIR CAERDYDD
PROJECTS DESIGN & DEVELOPMENT
DESIGN AND CONSTRUCTION MANAGEMENT
PROJECTS: DYLLUNO A DAIWRDU
ARWILIAETH CYNGORDD A CAERDYDD
Cardiff
CHIEF OFFICIAL CITY DEVELOPMENT
PRIF APTYDDOR DAIWRDU A DAIWRDU

THE COUNTY COUNCIL OF THE CITY & COUNTY OF CARDIFF
YSGOL TREGANNA: NEW PRIMARY SCHOOL
Proposed Site Plan
SLLC 6988 AL(0)05
November 2011
Telephone 029 2075 8233 Fax: 029 2075 0299



Legend
BLOCK A
BLOCK B
BLOCK C



0 - GA Floor Plan
1:250

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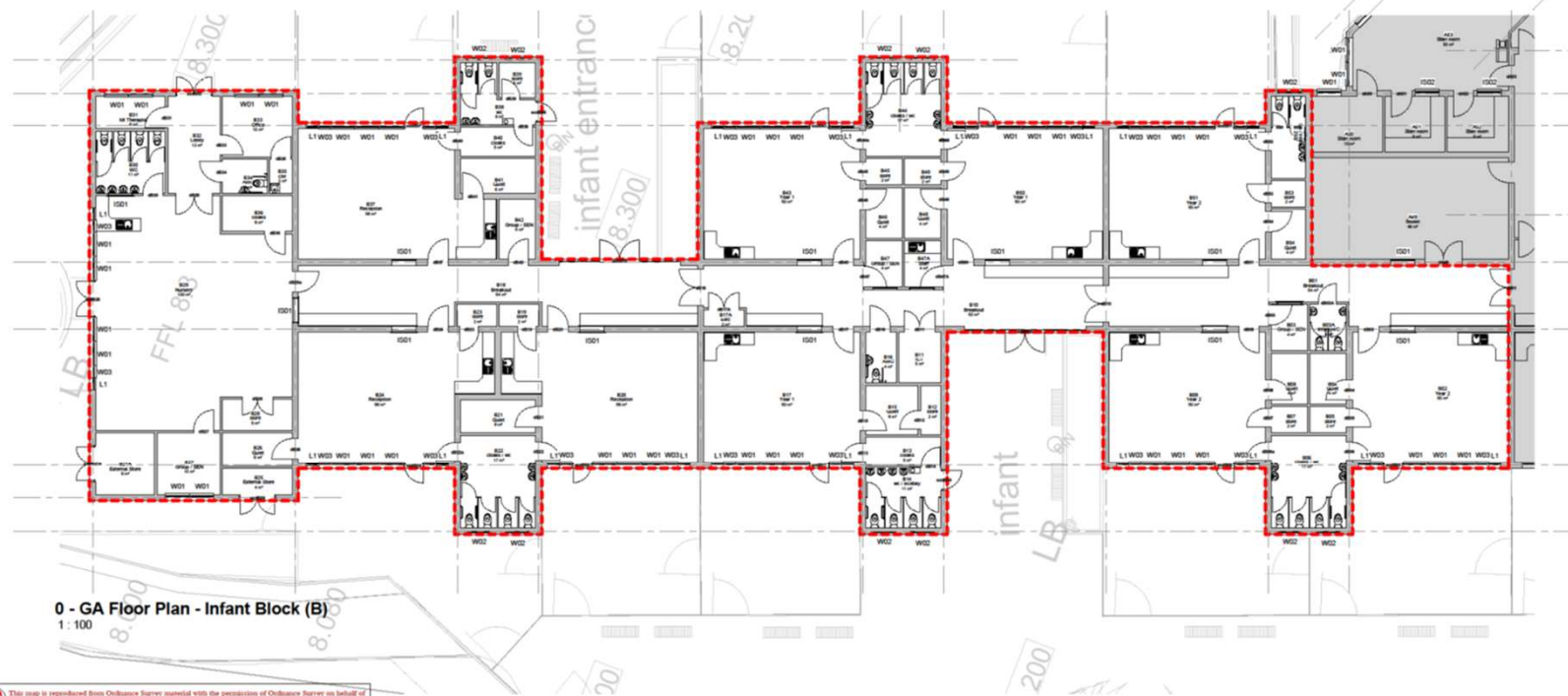


CYNGOR SIR DINAS A SIR CAERDYDD
THE COUNTY COUNCIL OF THE CITY & COUNTY OF CARDIFF
PROJECT TO DESIGN & DEVELOP
DESIGN AND CONSTRUCTION MANAGEMENT
PROJECT TO DESIGN & DEVELOP
REDEVELOPMENT OF THE SITE
Neil Hanratty
CHIEF OFFICER CITY DEVELOPMENT
PROJECT MANAGER

YSGOL TREGANNA: NEW
PRIMARY SCHOOL
Proposed GA Floor Plan
Drawn: G. Jones, Checked: J. Jones
Date: 10/01/2015
Scale: 1:250
Drawing No: AL(0)10
Project No: S.L.C. 6968



KEY PLAN
1:1000



0 - GA Floor Plan - Infant Block (B)
1:100

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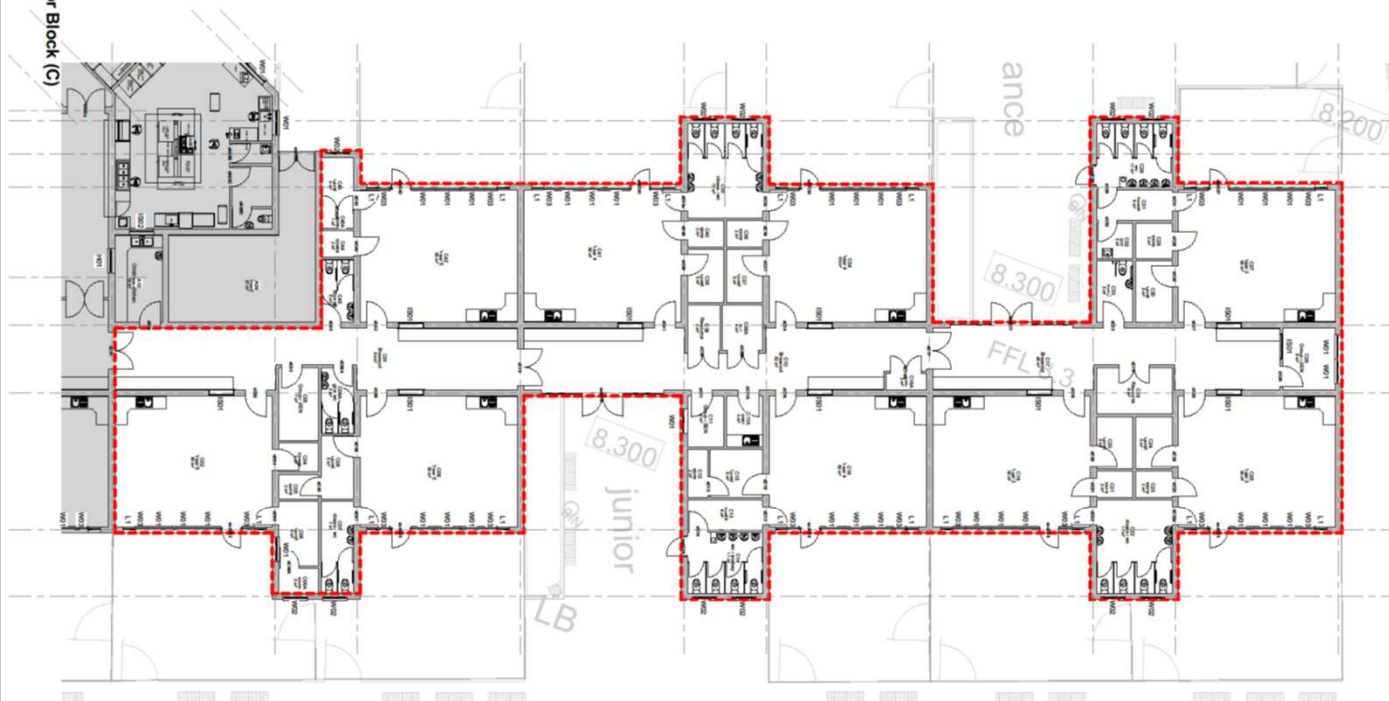
TENDER ISSUE



CYNGOR SIR DINAS A SIR CAERDYDD
PROJECTS DESIGN & DEVELOPMENT
DESIGN AND CONSTRUCTION MANAGEMENT
PROJECT: YSGOL TREGANNA NEW PRIMARY SCHOOL
BRIEF: AFTER CONSTRUCTION AND ASSESSMENT
Neil Hanratty
CHIEF OFFICER CITY DEVELOPMENT
PROP. REF: YSGOL TREGANNA NEW PRIMARY SCHOOL

THE COUNTY COUNCIL OF THE CITY & COUNTY OF CARDIFF
YSGOL TREGANNA NEW PRIMARY SCHOOL
Proposed GA Infant Block (B)
SILC 6988 AL(0)12
Borough Clerk, Llandudno, Cardiff CF11 0AA
Telephone 029 2075 5232 Fax: 029 2075 5279

0 - GA Floor Plan - Junior Block (C)
1 : 100



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TENDER ISSUE



CYNGOR SIR DINAS A SIR CAERDYDD

**PROJECTS, DESIGN & DEVELOPMENT
DESIGN AND CONSTRUCTION MANAGEMENT**

**PROJECTS: DELINIO A DATBUIG
RHIFRACHTY CYLLINDRO AC ADIELAU**

Neil Hanratty
CHIEF OFFICER CITY DEVELOPMENT
PRYF IFFICER DATBUIG'R DDYNA

THE COUNTY COUNCIL OF THE CITY & COUNTY OF CARDIFF				
NAME	PROJECT	STATUS	LOCATION	DATE
YSGOL TREGANNA: NEW PRIMARY SCHOOL	MGJ	Completed/Under Construction/Proposed 2011/2012/2013/2014/2015/2016/2017/2018/2019/2020/2021/2022/2023/2024/2025/2026/2027/2028/2029/2030/2031/2032/2033/2034/2035/2036/2037/2038/2039/2040/2041/2042/2043/2044/2045/2046/2047/2048/2049/2050/2051/2052/2053/2054/2055/2056/2057/2058/2059/2060/2061/2062/2063/2064/2065/2066/2067/2068/2069/2070/2071/2072/2073/2074/2075/2076/2077/2078/2079/2080/2081/2082/2083/2084/2085/2086/2087/2088/2089/2090/2091/2092/2093/2094/2095/2096/2097/2098/2099/2100/2101/2102/2103/2104/2105/2106/2107/2108/2109/2110/2111/2112/2113/2114/2115/2116/2117/2118/2119/2120/2121/2122/2123/2124/2125/2126/2127/2128/2129/2130/2131/2132/2133/2134/2135/2136/2137/2138/2139/2140/2141/2142/2143/2144/2145/2146/2147/2148/2149/2150/2151/2152/2153/2154/2155/2156/2157/2158/2159/2160/2161/2162/2163/2164/2165/2166/2167/2168/2169/2170/2171/2172/2173/2174/2175/2176/2177/2178/2179/2180/2181/2182/2183/2184/2185/2186/2187/2188/2189/2190/2191/2192/2193/2194/2195/2196/2197/2198/2199/2200/2201/2202/2203/2204/2205/2206/2207/2208/2209/2210/2211/2212/2213/2214/2215/2216/2217/2218/2219/2220/2221/2222/2223/2224/2225/2226/2227/2228/2229/2230/2231/2232/2233/2234/2235/2236/2237/2238/2239/2240/2241/2242/2243/2244/2245/2246/2247/2248/2249/2250/2251/2252/2253/2254/2255/2256/2257/2258/2259/2260/2261/2262/2263/2264/2265/2266/2267/2268/2269/2270/2271/2272/2273/2274/2275/2276/2277/2278/2279/2280/2281/2282/2283/2284/2285/2286/2287/2288/2289/2290/2291/2292/2293/2294/2295/2296/2297/2298/2299/2300/2301/2302/2303/2304/2305/2306/2307/2308/2309/2310/2311/2312/2313/2314/2315/2316/2317/2318/2319/2320/2321/2322/2323/2324/2325/2326/2327/2328/2329/2330/2331/2332/2333/2334/2335/2336/2337/2338/2339/2340/2341/2342/2343/2344/2345/2346/2347/2348/2349/2350/2351/2352/2353/2354/2355/2356/2357/2358/2359/2360/2361/2362/2363/2364/2365/2366/2367/2368/2369/2370/2371/2372/2373/2374/2375/2376/2377/2378/2379/2380/2381/2382/2383/2384/2385/2386/2387/2388/2389/2390/2391/2392/2393/2394/2395/2396/2397/2398/2399/2400/2401/2402/2403/2404/2405/2406/2407/2408/2409/2410/2411/2412/2413/2414/2415/2416/2417/2418/2419/2420/2421/2422/2423/2424/2425/2426/2427/2428/2429/2430/2431/2432/2433/2434/2435/2436/2437/2438/2439/2440/2441/2442/2443/2444/2445/2446/2447/2448/2449/2450/2451/2452/2453/2454/2455/2456/2457/2458/2459/2460/2461/2462/2463/2464/2465/2466/2467/2468/2469/2470/2471/2472/2473/2474/2475/2476/2477/2478/2479/2480/2481/2482/2483/2484/2485/2486/2487/2488/2489/2490/2491/2492/2493/2494/2495/2496/2497/2498/2499/2500/2501/2502/2503/2504/2505/2506/2507/2508/2509/2510/2511/2512/2513/2514/2515/2516/2517/2518/2519/2520/2521/2522/2523/2524/2525/2526/2527/2528/2529/2530/2531/2532/2533/2534/2535/2536/2537/2538/2539/2540/2541/2542/2543/2544/2545/2546/2547/2548/2549/2550/2551/2552/2553/2554/2555/2556/2557/2558/2559/2560/2561/2562/2563/2564/2565/2566/2567/2568/2569/2570/2571/2572/2573/2574/2575/2576/2577/2578/2579/2580/2581/2582/2583/2584/2585/2586/2587/2588/2589/2590/2591/2592/2593/2594/2595/2596/2597/2598/2599/2600/2601/2602/2603/2604/2605/2606/2607/2608/2609/2610/2611/2612/2613/2614/2615/2616/2617/2618/2619/2620/2621/2622/2623/2624/2625/2626/2627/2628/2629/2630/2631/2632/2633/2634/2635/2636/2637/2638/2639/2640/2641/2642/2643/2644/2645/2646/2647/2648/2649/2650/2651/2652/2653/2654/2655/2656/2657/2658/2659/2660/2661/2662/2663/2664/2665/2666/2667/2668/2669/2670/2671/2672/2673/2674/2675/2676/2677/2678/2679/2680/2681/2682/2683/2684/2685/2686/2687/2688/2689/2690/2691/2692/2693/2694/2695/2696/2697/2698/2699/2700/2701/2702/2703/2704/2705/2706/2707/2708/2709/2710/2711/2712/2713/2714/2715/2716/2717/2718/2719/2720/2721/2722/2723/2724/2725/2726/2727/2728/2729/2730/2731/2732/2733/2734/2735/2736/2737/2738/2739/2740/2741/2742/2743/2744/2745/2746/2747/2748/2749/2750/2751/2752/2753/2754/2755/2756/2757/2758/2759/2760/2761/2762/2763/2764/2765/2766/2767/2768/2769/2770/2771/2772/2773/2774/2775/2776/2777/2778/2779/2780/2781/2782/2783/2784/2785/2786/2787/2788/2789/2790/2791/2792/2793/2794/2795/2796/2797/2798/2799/2800/2801/2802/2803/2804		

Handover August 2013



Handover August 2013



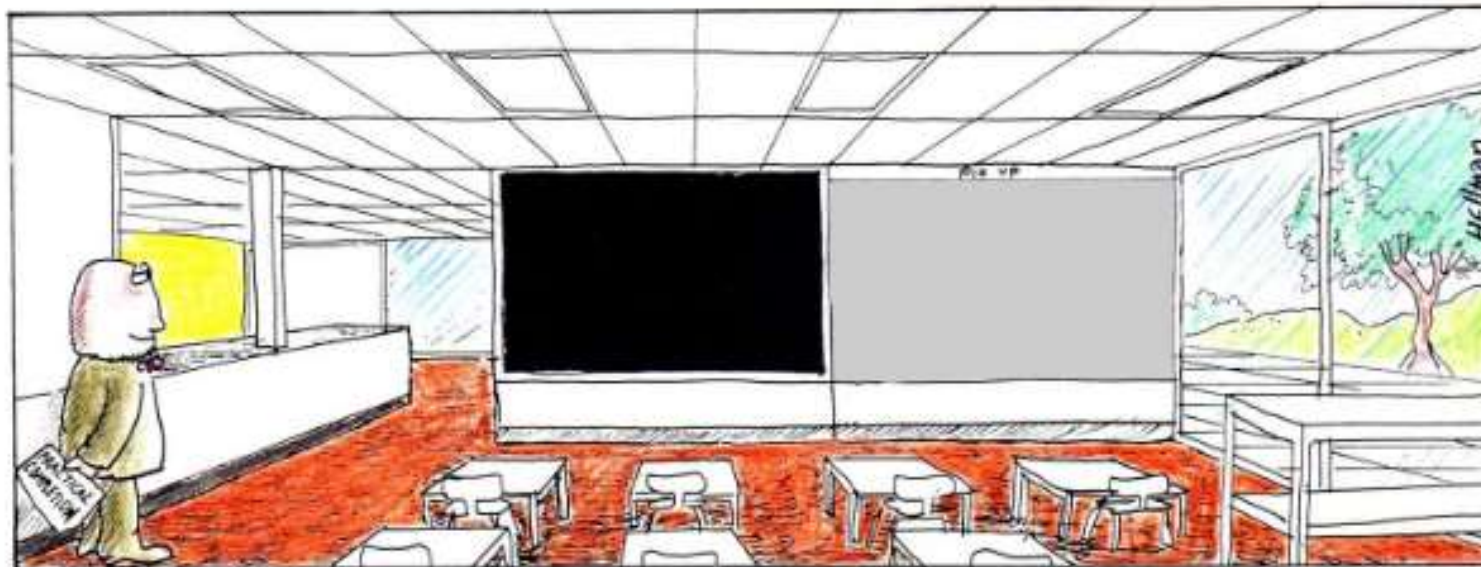
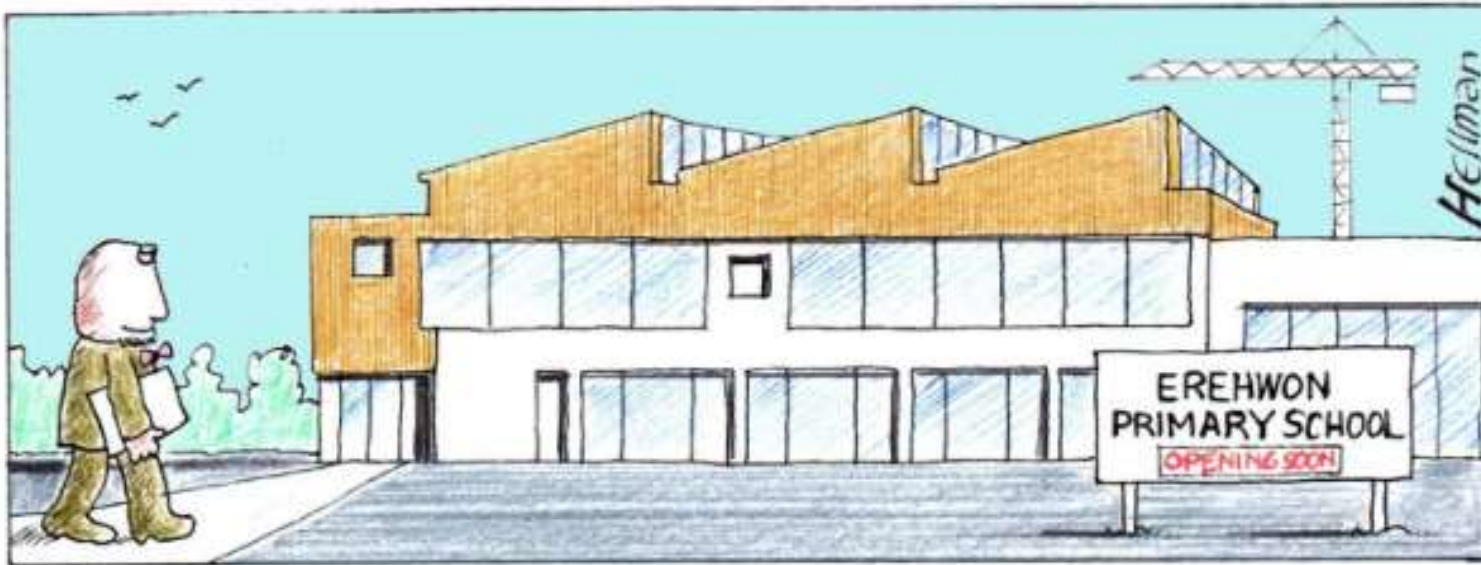








<https://www.google.co.uk/maps/@51.4818009,-3.2167394,346a,35y,180h,39.42t/data=!3m1!1e3>



Louis Hellman in
Architect's Journal



Assessment 2

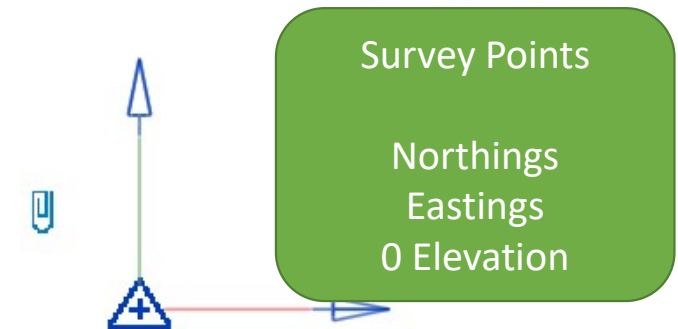
Architectural Model

- Start a new project in REVIT – default metric template'
 - Set up levels
 - Set up Project Base Point and Survey Point to the given coordinates
 - Insert OSMAP in site view
 - Unpin OSMAP and relocate to the Project Base Point and Survey Point
 - Set up project north
 - **Set Up Phasing**
 - Load Splash Page Titleblock
 - Load UWTSD Titleblock
- SAVE file (with appropriate naming) and Close

Structural Model

- Start a new project in Revit – 'structural analysis metric template'
 - Set up levels
 - Insert Revit Link file (above), by 'internal origin to internal origin'
 - Relocate Project Base Point and Survey Point to the to match those of the Linked File
 - Load Splash Page Titleblock
 - Load UWTSD Titleblock
- SAVE File (with appropriate naming) and Close

*Reopen the Architectural model and Insert Revit Link by
'Project base point to Project base point'



NOW START DRAWING