Build Health International

BHI Site Assessment: Future PSA Plant

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This document was developed by Build Health International to support global medical oxygen infrastructure planning, site preparation, operation, maintenance, and sustainability. Additional technical resources are available at www.bhioxygen.org.

Hospital Information				
Form Completed By	**Name**		**Title**	
Hospital / Facility Name				
Date of Visit				
Hospital Contact Information	**Name**		**Title**	
	Number (include country code)		**Email**	
	Preferred Contact Method	▢	**Phone**	
		▢	**WhatsApp**	
		▢	**Email**	
Capture GPS Pin	▢	**Completed**		
Photo of Hospital/Facility Sign	▢	**Completed**		
	Max		**Min**	**Average**
Temperature				
Humidity				
What is the approximate altitude of the hospital?				
Note any significant environmental hazards that could impact the PSA plant (sand storms, near the ocean, flooding etc.)				

Bed Count		
What is the number of beds that will be served by this oxygen plant?	Host Hospital/Facility:	
	Other Health Facilities:	
	Total Beds:	

Please provide bed counts for the different types of beds, using the table below.

Ward	Bed Count	Outlets	
		Functional*	Not Functional
Emergency			
Maternity			
Pre-op/PACU			
NICU			
PICU			
General ICU			
High Dependency Unit			
General Adult			
General Pediatric			
TB			
COVID-19			
Other			
Operating rooms			

**An outlet is functional if oxygen flows out of it at a purity of 90%. If you have an oxygen analyzer, you can test the purity to determine if the oxygen is flowing above the minimum purity (90%) for medical grade oxygen. This would be considered a functional outlet. However, if you do not have an oxygen analyzer, define the functionality of the outlet as whether or not oxygen flows from the outlet.*

Existing Oxygen Delivery		
How does the hospital currently deliver oxygen to patients? Check all that apply.	▢	Wall-mounted outlets
	▢	Individual cylinders
	▢	Oxygen concentrators
Provide more details on the delivery method(s). For example, commercial source of cylinders or number of oxygen concentrators. Include all information shared by hospital staff.		
Comment on the functionality of the delivery method(s)		
Wall-mounted Outlets (Oxygen Piping Network)		
Is the existing piping network functional?	▢	Yes, all piping is functional
	▢	Yes, but to only some areas
	▢	No
Give a brief description of any problems with the existing piping network.		
Take photos of the wall outlets	▢	Complete
Provide a drawing/map of the piping network on a separate piece of paper.	▢	Completed
Are the wall-mounted outlets supplied from cylinder manifolds?	▢	No
	▢	Yes

IF YES: Collect the following information for each oxygen cylinder manifold. Take photos of the manifold location and the pressure gauge if the manifold is in use.

Manifold	Wards manifold supports	# of cylinders	Location of manifold	Outlet pressure (bar)
1				
2				
3				
4				
5				
6				
7				
8				

Is there an existing PSA plant at the hospital or facility?	▢	**No**
	▢	**Yes**
IF YES: What is the PSA plant capacity (N3m/hr)?		
IF YES: When was it installed?		
IF YES: What is the oxygen delivery method of the PSA plant?	▢	**Cylinder filling only**
	▢	**Direct piping to oxygen outlets only**
	▢	**Supplies oxygen directly and can also fill cylinders**
	▢	**PSA plant is not functional**
IF PSA plant is not functional: Comment on its intended oxygen delivery method, when it broke down, and why it broke down.		

New Oxygen Delivery Plan		
When the new PSA plant is installed, how are you planning to deliver oxygen to beds? Check all that apply.	▢	**Wall-mounted outlets from cylinder manifolds**
	▢	**Wall-mounted outlets piped directly from PSA plant**
	▢	**Individual cylinders**
What is/are the highest priority ward(s) for piping (e.g., ICU, NICU, labor rooms, etc.)?		
Does the hospital have any plans for expansion?	▢	**No**
	▢	**Yes**
IF YES: How many beds will be added?		
IF YES: What kind of beds will they be? ***(e.g., NICU, maternity, ICU, etc)***		
IF YES: When will construction start?		
IF YES: Are there plans?	▢	**No**
	▢	**Yes**
IF YES: Who is funding the project?		
IF YES: Will the new PSA plant support it?	▢	**No**
	▢	**Yes**

Oxygen Supply to Peripheral Facilities		
Does the facility plan to fill cylinders for other health facilities?	▢	**No**
	▢	**Yes**
List the peripheral health facilities and their distances from the primary facility below:		
Other Health Facility	**Bed Count**	**Time/Distance (km) from primary facility**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
Cylinders		
What is your current source of oxygen cylinders?		
How long does it take to get oxygen cylinders from the current source?		

Are there areas of the hospital or applications that will require oxygen cylinders?		
What standard size of cylinder do you use?		
What type of valves are on the cylinders?		
Take photos and videos of the cylinders from all angles. There is no such thing as too many photos and videos.	▢	**Completed**

Location		
Have any potential sites been identified where the new PSA plant could be located?	▢	**No**
	▢	**Yes**
IF YES: Capture GPS pins of each location option	▢	**Completed**
IF YES: Record the approximate dimensions of each potential site?	**Option 1:** **Option 2:** **Option 3:**	
Does the hospital have a site plan or campus map that they can share? If so, request a copy.	▢	**No**
	▢	**Yes**
Measure the perimeter of each potential space available for the PSA plant house and draw a diagram.	▢	**Completed**
Site Option 1		
Is there anything on the site that needs to be removed?	▢	**No**
	▢	**Yes**
Comments		

Is the hospital aware of any underground utilities on the site?	▢	**No**
	▢	**Yes**
Comments		
Describe the site grading and identify any major slopes or features:		
Take measurements of the slope of the site. Record here. Include a diagram on a separate piece of paper.		
Take photos and videos of the site from all angles. There is no such thing as too many photos and videos.	▢	**Completed**
Are there any sources of air pollution (dust, generator exhaust, kitchen exhaust, incinerator, garage, etc.) near (less than 10m) planned PSA plant location?	▢	**No**
	▢	**Yes**
Is the site selected for the plant installation respecting minimum distance to flammable sources (e.g., fuel tank, storage of flammable material, waste area, etc)?	▢	**No**
	▢	**Yes**
If YES: What is the source of pollution?		
Are there signs of flooding near the planned PSA plant location?		
Site Option 2		
Is there anything on the site that needs to be removed?	▢	**No**
	▢	**Yes**
Comments		
Is the hospital aware of any underground utilities on the site?	▢	**No**
	▢	**Yes**
Comments		

Describe the site grading and identify any major slopes or features:		
Take measurements of the slope of the site. Record here. Include a diagram on a separate piece of paper.		
Take photos and videos of the site from all angles. There is no such thing as too many photos and videos.	▢	**Completed**
Are there any sources of air pollution (dust, generator exhaust, kitchen exhaust, incinerator, garage, etc.) near (less than 10m) planned PSA plant location?	▢	**No**
	▢	**Yes**
Is the site selected for the plant installation respecting minimum distance to flammable sources (e.g., fuel tank, storage of flammable material, waste area, etc)?	▢	**No**
	▢	**Yes**
If YES: What is the source of pollution?		
Are there signs of flooding near the planned PSA plant location?		
Site Option 3		
Is there anything on the site that needs to be removed?	▢	**No**
	▢	**Yes**
Comments		
Is the hospital aware of any underground utilities on the site?	▢	**No**
	▢	**Yes**
Comments		
Describe the site grading and identify any major slopes or features:		
Take measurements of the slope of the site. Record here. Include a diagram on a separate piece of paper.		

Take photos and videos of the site from all angles. There is no such thing as too many photos and videos.	▢	**Completed**
Are there any sources of air pollution (dust, generator exhaust, kitchen exhaust, incinerator, garage, etc.) near (less than 10m) planned PSA plant location?	▢	**No**
	▢	**Yes**
Is the site selected for the plant installation respecting minimum distance to flammable sources (e.g., fuel tank, storage of flammable material, waste area, etc)?	▢	**No**
	▢	**Yes**
If YES: What is the source of pollution?		
Are there signs of flooding near the planned PSA plant location?		
List the pros and cons of each site option below:		

Plant House Type		
Will the PSA plant be housed in a container or inside a PSA plant building?	▢	**Container**
	▢	**New building (to be constructed)**
	▢	**Existing standalone plant house building**
	▢	**Plant room in an existing building**
	▢	**Undecided**
Is there an existing PSA plant house?	▢	**No**
	▢	**Yes**
IF YES: Is there a non-functional plant that needs to be removed in order to install the new plant?	▢	**No**
	▢	**Yes**
IF YES: What are the key dimensions?	▢	**Doorway (HxW)**
	▢	**Ceiling Height:**
	▢	**Room Dimensions (LxW):**

Access		
Is there adequate truck access to deliver the PSA plant to the planned location? (min 14 ft (4.3m) of height, min 10 ft (3m) of width, any seasons when roads are impassable?)	▢	No
	▢	Yes
Comments:		
Is there adequate crane access for containerized plants being delivered to the site? (Note power lines, trees, etc)	▢	No
	▢	Yes
Comments:		
How high above grade does the PR want the slab to be? Consider flooding risk.		
Is there adequate access to the plant for trucks collecting and returning cylinders?	▢	No
	▢	Yes
Is there space to build a ramp to aid with the transportation of cylinders?	▢	No
	▢	Yes

Programming		
Will the facility require cylinder storage?	▢	No
	▢	Yes
IF YES: Will cylinder storage need to be designed into their plant house structure?	▢	No
	▢	Yes
IF YES: Will the facility be utilizing a fork lift for cylinder transport?	▢	No
	▢	Yes
IF YES: Does the facility require a ramp and platform (e.g., loading dock) for cylinder delivery?	▢	No
	▢	Yes
If YES: How high does the platform/loading dock need to be? Note: This will depend on the height of the truck beds being used to transport the cylinders.		
Is there an existing space available for cylinder storage?	▢	No
	▢	Yes
Comments		

IF YES: Please provide details on the location, distance from future PSA plant site, suitability, and if it is big enough.		
Are there any other programming needs?	▢	**Toilet**
	▢	**Office**
	▢	**Storage (spare parts, tools, etc)**
	▢	**Solar / Electrical Room**
	▢	**Other**
Comments		

Human Resources		
Are there any existing staff at the hospital/facility that have the skill and capacity to operate the PSA plant?	▢	**No**
	▢	**Yes**
IF YES: List their names, positions, and contact information. Make a note of their level of experience.		
IF NO: Describe the potential staffing needs		

Additional Health Facilities		
What is the number of beds that will be served by this oxygen plant?	**Host Hospital/Facility:**	
	Total Beds:	
Please provide bed counts for the different types of beds, using the table below.		
Ward	**Bed Count**	**Outlets**
Emergency		
Maternity		
Pre-op / PACU		
NICU		
PICU		
General ICU		
High Dependency Unit		
General Adult		
General Pediatric		
TB		
COVID-19		
Other:		
Number of operating rooms:		

Additional Health Facilities		
What is the number of beds that will be served by this oxygen plant?	**Host Hospital / Facility:**	
	Total Beds:	
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Ward	**Bed Count**	**Outlets**
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General ICU		
High Dependency Unit		
General Adult		
General Pediatric		
TB		
COVID-19		
Other:		
	Number of operating rooms:	