

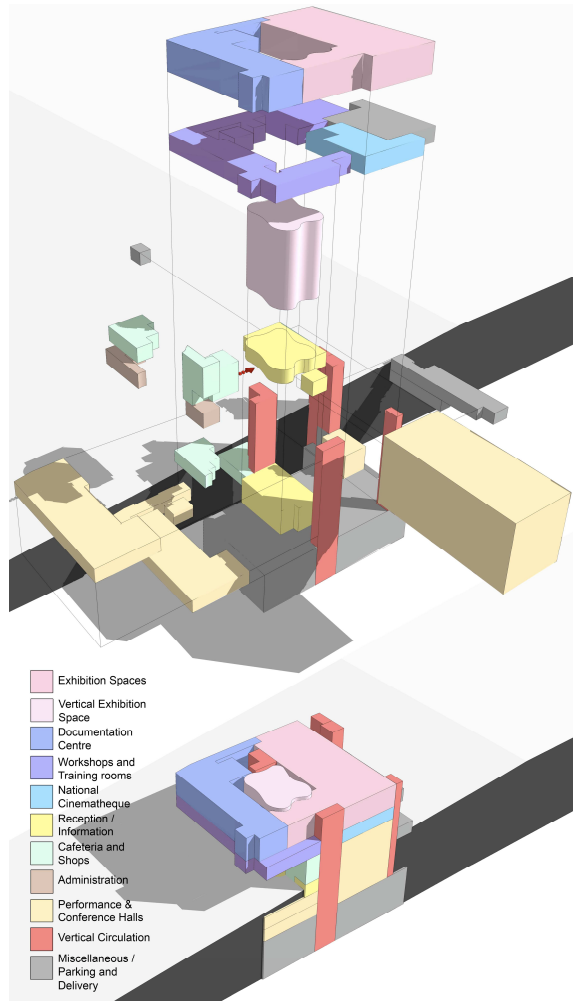
## **HOUSE OF ART AND CULTURE . LOT 128-04 SECTOR J . BEIRUT . LEBANON**

Our proposal for the HAC is a transparent and dynamic structure that integrates performance spaces and creative education, encouraging the sharing of inspiration, creativity and knowledge. We have designed a building that is not about itself as much as it is about the people using and enjoying it, an arena for ideas exchange and a breeding ground for the Lebanese and Arabic cultural and artistic manifestations. The scheme's architectural language is physically contextual, responding to and conversing with the site's climate and microclimate, the direct physical environment, and the brief's spatial, functional and environmental requirements thereby creating a timeless architectural expression conversing with the cultural and religious diversity of the Lebanese and Arabic regional milieu.

**Urban and architectural objectives** – Our proposal maintains the scale of the surrounding square by respecting the 32m envelope and the minimum 70% build-to lines. The project height achieves harmony with its neighbouring buildings especially the Bakri House, in-keeping with the predominant low-rise urban canopy of the downtown area. The building's massing consists of two interlocking volumes, a lower solid block and an upper glass plate which projects towards the Bacri House square. On the north, the building is elevated off the ground along Ghalgoul Street and opens up as a main entrance to the complex. The life and landscaping of the square have been extended into the site below this cantilever in the form of a shaded outdoor sculpture garden, social event space and restaurant spill out area. The building's gently sloping entrance terrace opens the building invitingly to the public, the low level transparent glass façade hints at the artistic content and life inside the building, blurring the boundary between building and square and opening up the building to visitors and passers-by, the majority of whom would be coming from the business and commercial downtown district. This elevated light glass mass is anchored to a solid dark stone clad block facing south which provides environmental protection to the complex by acting as a buffer from and control of south solar gain, noise and pollution from the busy Ring Road. The solid and imposing south façade gives a narrative of the events within via a large plasma display to motorised passers-by and neighbouring buildings. The un-obscured south façade and part of the roof harness solar energy through photovoltaic arrays as explained below. The east, north and west facades of the building are airy and transparent/translucent, offering views in and hinting at the activities taking place within. The glass plate consists of strata-like alternating horizontal transparent, translucent and opaque glass strips, reminiscent of Beirut's rich archaeological layering unearthed in the downtown area. The tension of the cantilevered glass plate echoes the dynamism, buzz and pulsating creativity taking place within the building. The roof acts as the building's 5<sup>th</sup> elevation. Overlooked by neighbouring taller buildings, it provides a carpet of activities consisting of sculpture garden and landscaped terrace, and offers select views over the square towards the downtown district.

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**Functional and spatial organisation** –The building’s internal accommodation is organised



around a tall glass space, the IDEAS EXCHANGE, which penetrates all levels of the building with stairs and lifts connecting all floors (figure 1 left). This space epitomizes the beating heart of the building where people meet. The abundant amount of space allows for exhibitions, performances and events. The idea is to blend visitors, artists, learners, researchers, staff, and to open up the different arts to one another. The curved enclosure of the IDEAS EXCHANGE is formed from a ‘skin’ of glass panels of differing transparency/translucence offering a canvas of expression; films and images are projected on the translucent glass, visible from all surrounding spaces and the reception hall. The volume of the IDEAS EXCHANGE on the other hand invites artists to experiment with the volumes and respond in various artistic expressions (sculpture such as hanging mobiles, and performing arts such aerial dance). At night, coloured LED

lighting transforms the glass wall into a light sculpture. The building’s accommodation is interwoven around the Ideas Exchange in a mix of high and low stories. The circulation space around the Ideas Exchange also serves as informal meeting and discussion spaces allowing exchange and debate as well as small exhibitions, displays and AV screens. The busiest level is the ground floor entrance which is generated by the variety of activities such as restaurant, information, shop and exhibition. The large performance spaces are located in the basement, the library and gallery spaces at the ‘calmer’ and abundantly daylit top of the building away from the hustle of city life. These spaces open onto an external landscaped sculpture garden and roof top sculpture terrace which forms part of the IDEAS EXCHANGE. In order for the large performance space to accommodate various types of performances, we propose the lowest seating level (i.e. front stalls) to have seating which retract into a floor pit to create a flat floor (see section AA). Similarly, the seating smaller performance space is convertible into a flat space with the raked seats retracting into towards the back wall.

The delivery area is off the Avenue du General Fouad Chehab, discretely tucked away from pedestrian movement.

**Environmental, technical and construction solutions** – The primary structure consists of concrete columns and post tensioned flat floor and roof slabs to simplify integration of M&E ducts and maximise future flexibility. The cantilevered element is formed using floor-deep triangulated steel trusses. The external cladding is fixed back to the primary structure. Subject to ground investigation, the substructure consists of piled foundations and concrete shear wall retaining walls. Generally all lift shafts and cores are formed in concrete, and internal walls constructed from dense blockwork to provide necessary acoustic performance and thermal mass to temper the internal thermal environment. Environmentally, our design maximises passive energy opportunities while minimising non-renewable energy demands. Our environmental strategic thinking on the scheme resulted in various key features following our assessment and understanding of Beirut’s microclimatic data, as touched upon above and listed below:

- meticulous zoning of spaces in the scheme on the basis of their environmental (as well as functional) needs, i.e. sealed functions requiring controlled environmental conditions (performance spaces, cinema) are located below ground to the deeper south end of the site. Other smaller spaces requiring no daylight (i.e. sound studios in the workshop area, toilets, archive, storage) are generally occupying the deeper end of floor plates where daylight is less abundant. On the other hand spaces that need daylight and natural ventilation are lifted to ground level and above, and predominantly adjacent to an external façade
- abundant daylight, transparency and interconnected spaces for natural cross-ventilation: fresh air enters through openable windows to all usable spaces adjoining the façade and returns at low speed through the atrium-like IDEAS EXCHANGE and is purged to the outside environment at the top of the atrium (figure 2, left)
- optimised and controlled diffused daylight in the gallery space via northern lights with operable blinds; these lights are openable to allow for natural ventilation and potential night time cooling (figure 3, right and figure 2, left)
- glazed plate made of double skin glass with manually openable windows and controllable metal louvers in the cavity, vertical louvers on the east and west façades to obstruct unwanted low sun angles, and horizontal on the north façade to deflect daylight deeper within the plan – the cavity is accessible from the inside for cleaning and maintenance louvers
- Beirut’s abundant solar rays harnessed in two ways: 1) photovoltaic cells on the unobstructed south façade and the south face of the northern lights producing clean electricity (figure 3, left), and 2) passive solar heat build-up within the south volume behind the wall south display wall recirculated into the building via the adjacent plant space on level 3 during cold months (figure 2, right)

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- in addition to natural ventilation, various low carbon cooling technologies can be explored coupled with high internal thermal mass (concrete structure with masonry walls), such as 1) absorption chillers harnessing solar heat gain, 2) energy efficient air handling unit assisted mixed mode ventilation boosted with cooling chillers when required, 3) 'Roman style' radiative or fresh air concrete cooling earth ducts potentially coupled with the piled foundation, using the earth's coolth; this system can be reversed during winter for heating purposes
- use of robust, honest and durable materials: locally/regionally sourced stone for cladding and internal finishes, glass (clear/translucent/opaque), in-situ fair-faced concrete using recycled aggregates potentially from the on-site cut soil subject to suitability
- during design development, use of an environmental assessment method during the development of the project (such as BREEAM or LEED) to ensure that environmental targets are agreed and formalised at project inception between all parties and that these targets are maintained during project development and successfully met at project completion
- explore additional natural resource saving technologies such as rainwater harvesting for re-use in toilets and showers
- planted / landscaped flat roof terraces to mitigate urban heat spots and unwanted solar gain

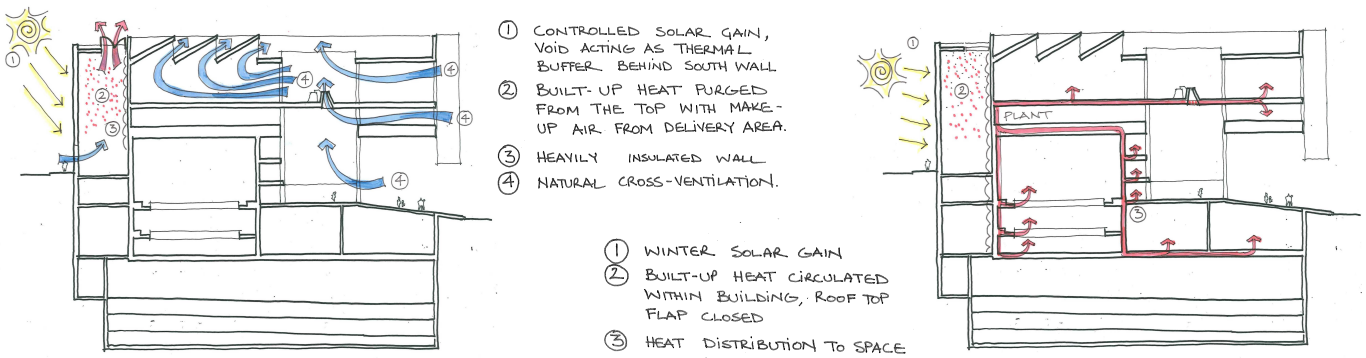


Figure 2

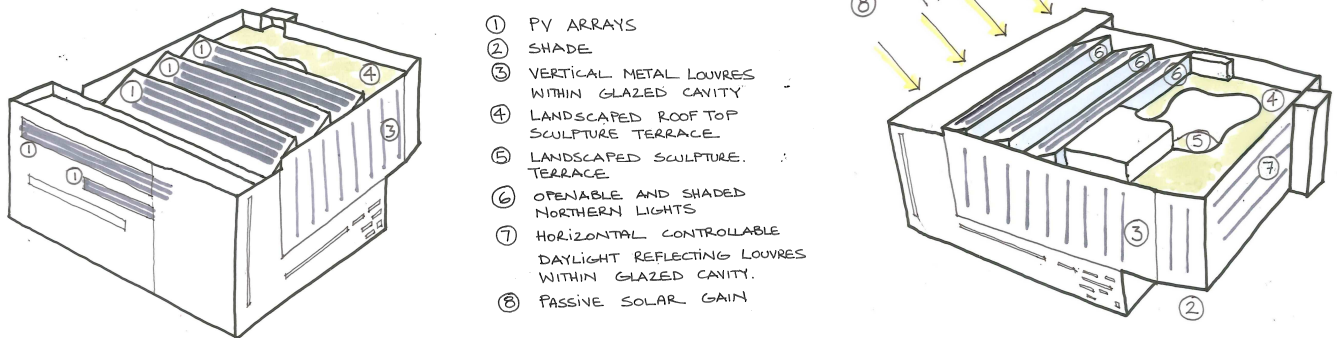


Figure 3