FORMAT POUR LA SOUMISSION DES RAPPORTS SUR L'ETAT DE CONSERVATION PAR LES ÉTATS PARTIES

(Conformément au paragraphe 169 des Orientations)

Nom du bien du patrimoine mondial (Etat(s) partie(s)) (Numéro d'identification) :

L'Œuvre architecturale de Le Corbusier, une contribution exceptionnelle au Mouvement Moderne (Allemagne, Argentine, Belgique, France, Inde, Japon, Suisse) (N46 28 6.29 E6 49 45.61)

1. Résume analytique du rapport

[Note : chacune des sections décrites ci-après doit être résumée. Le résume analytique ne doit pas dépasser une page.]

L'état de conservation des 17 composantes du bien transnational en série est globalement satisfaisant, grâce, notamment, aux dispositions législatives en vigueur qui apportent un surcroît de protection aux différents éléments de la série.

Pour la première fois depuis l'inscription du bien en 2016, a été établi par la France, qui assure en 2022 la présidence de la Conférence permanente internationale (CPI), un tableau de synthèse, validé par les sept Etats-parties et annexé au présent rapport. Ce document témoigne de la coordination renforcée au sein de la CPI et plus généralement, entre toutes les composantes solidaires de ce bien en série.

En règle générale, les éléments constitutifs du bien sont désormais couverts par les mesures de protection nationales les plus élevées. Aucune intervention ne peut y être conduite sans l'autorisation spéciale des services nationaux compétents. Depuis le précédent rapport en 2020, aucune composante n'a fait l'objet d'interventions susceptibles d'impacter le bien dans son ensemble ou les attributs soutenant la valeur universelle exceptionnelle (VUE). De même, aucun projet dans la zone tampon susceptible de porter atteinte au bien n'est à signaler.

Concernant la coordination des 10 composantes françaises du bien, depuis l'automne 2017, la direction régionale des affaires culturelles (DRAC) d'Île-de-France, service déconcentré du ministère de la Culture, a mis en place un comité de pilotage national qui se réunit chaque année sous la présidence du préfet de région, nommé préfet coordonnateur de la série par arrêté du 11 janvier 2017, dont le mandat a été renouvelé pour la période 2022-2027, afin de coordonner l'action des 6 préfets des régions concernées et réunissant l'ensemble des partenaires (propriétaires, gestionnaires, collectivités locales, services de l'État en région). Ce comité de pilotage national poursuit un double objectif : d'une part, coordonner l'action des services de l'État et des collectivités locales dans la mise en œuvre des plans de gestion et le suivi des projets d'aménagement dans le périmètre des zones tampons ; d'autre part, apporter une réponse coordonnée au plan national aux recommandations du comité du patrimoine mondial et d'ICOMOS international pour chacun des différents sites (indicateurs de suivi et études d'impact). Cette instance nationale s'est accompagnée de la mise en place de comités de pilotage locaux placés sous l'autorité des préfets des différentes régions concernées et animés par les correspondants en DRAC chargés du suivi des éléments de la série en lien avec la Fondation Le Corbusier, gardienne du droit moral de l'œuvre de l'architecte. Ce travail de coordination s'est accompagné en 2022, à l'occasion de la présidence française, de la réunion d'une CPI extraordinaire, le 12 juillet 2022, en visioconférence, entre les 7 États parties afin de renforcer la gestion coordonnée du bien, conformément aux dispositions de la VUE qui invite expressément les États parties à adopter des approches communes en matière de protections, de conservation et d'actions de médiation.

Concernant les actions de médiation, est à signaler le développement de nouveaux outils numériques, des visioconférences et des visites virtuelles (notamment en Allemagne, en Argentine, en France, au Japon et en Suisse).

2. Réponse des États parties à la décision du Comité du patrimoine mondial : **Décision 44 COM 7B.152**

[Note : le ou les État(s) partie(s) est/sont priés de répondre aux demandes de la décision du Comité du patrimoine mondial la plus récente sur ce bien, paragraphe par paragraphe.]

Point 4. C*oncernant les recommandations du comité du patrimoine mondial relatives aux études d'impact :*

Les études d'impact n'étant pas prévues par le code du patrimoine en France mais uniquement par le code de l'environnement, la direction régionale des affaires culturelles d'Île-de-France s'est conformée à l'article 172 du *Guide des Orientations* en alertant début 2019 le ministère de la Culture sur la nécessité d'informer l'UNESCO de deux projets susceptibles d'avoir un impact sur la valeur universelle exceptionnelle (VUE) de la série concernant la Manufacture des Vosges à Saint-Dié et l'Unité d'Habitation à Marseille.

Concernant les compléments demandés par le Centre du patrimoine mondial le 19 octobre 2020 pour l'Unité d'Habitation à Marseille relativement aux "atteintes éventuelles aux vues vers et depuis l'élément inscrit", ces éléments seront communiqués dans le cadre de la préparation du cahier des charges de la nouvelle étude pour les orientations d'aménagement et de programmation (OAP) Michelet qui est en cours avec l'architecte des bâtiments de France (ABF) et la Métropole marseillaise. Celle-ci donnera lieu à enquête publique en octobre 2023 et adoption par la Ville et la Métropole avant fin 2024.

Concernant la Manufacture Saint-Dié des Vosges, prévoyant la construction d'un espace d'interprétation permettant au public d'accéder à l'usine toujours en activité mais fermée à la visite, une étude d'impact a été transmise au Centre du patrimoine mondial le 24 juin 2020. Cette étude a fait l'objet d'une demande de compléments à la suite du rapport d'ICOMOS international portant sur le devenir des bâtiments concernés par le projet pour le nouveau centre d'accueil et le parc de stationnement, qui devraient être prochainement transmis pour avis.

Pour tous les futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien seront établies des EIP (évaluations d'impact sur le patrimoine).

Point 5. *Concernant les demandes d'information relatives au* ***Complexe du Capitole à Chandigarh****,* l'État partie a établi et fourni en annexes les rapports d'EIP relatifs aux projets de structure auxiliaire de chauffage, de ventilation et de climatisation (CVC) ainsi que de parking en sous-sol à plusieurs niveaux. Le rapport d'avancement détaillant les impacts potentiels du projet proposé pour le développement général de la Haute Cour du Pendjab et de l'Haryana est également joint en annexe 2.

Point 6. *Concernant les mesures spécifiques de protection concernant* ***la zone tampon de Maison Guiette*****,** les mesures qui s'appliquent dans les autres biens se retrouvent aux abords de la Maison Guiette telles que précisées dans l'annexe 3.

Point 7. *Conformément au paragraphe 172 des Orientations, décrire toute restauration potentielle importante, altération potentielle et/ou toute nouvelle(s) construction(s) potentielle(s) qui pourrai(en)t être entreprise(s) à l'intérieur du bien, de ou des zones tampon, des corridors ou de toute autre localisation ou un tel développement pourrait avoir un impact sur la valeur universelle exceptionnelle (VUE) du bien, y compris sur son authenticité et son intégrité* :

Les sept États parties sont informés de la nécessité d'informer en amont le Centre du patrimoine mondial de tout projet d'aménagement susceptible d'avoir un impact substantiel sur la VUE du bien et prévoient des réunions de concertation entre les différents acteurs concernés afin de s'assurer que les projets respectent ses préconisations. Ainsi, le projet de rénovation de la Cité mixte scolaire Le Corbusier aux abords de la Villa Savoye en France a fait l'objet d'une réunion sur place en juin 2022 avec le maître d'ouvrage et

le maître d'œuvre afin d'encadrer le projet de prescriptions visant au respect de la VUE du bien.

Actuellement, aucun projet irréversible avec un impact potentiel sur la valeur universelle exceptionnelle n'est à signaler.

3. Accès public au rapport sur l'état de conservation

[Note : ce rapport sera téléchargé, en vue de son accès public, sur le « Système d'information sur l'état de conservation » du Centre du patrimoine mondial (http://whc.unesco.org/fr/soc). Si votre État Partie demande que le rapport complet ne soit pas téléchargé, seul le résumé analytique d'une page, prévu au point (1) ci-dessus, sera téléchargé pour accès public.]

Les États parties ne sont pas opposés au téléchargement du rapport complet.

7. Signature de l'Autorité

(In accordance with paragraph 169 of the Operational Guidelines)

Name of World Heritage property (State(s) Party(ies)) (Identification number) :

The Architectural Work of Le Corbusier, an Exceptional Contribution to the Modern Movement (Argentina, Belgium, France, Germany, India, Japan, Switzerland) (N46 28 6.29 E6 49 45.61)

1. Executive summary of the report

[*Note: Each of the sections described below should be summarised. The executive summary should not exceed one page]*.

The state of conservation of the 17 components of the serial transnational property is generally satisfactory, thanks in particular to the legislative provisions in force which provide additional protection for the various elements of the series.

For the first time since the inscription of the property in 2016, a summary table has been drawn up by France, which holds the presidency of the International Standing Conference (ICC) in 2022, validated by the seven States Parties and annexed to this report. This document bears witness to the strengthened coordination within the ICC and, more generally, between all the components of this serial property.

As a general rule, the components of the property are now covered by the highest national protection measures. No intervention can be carried out on them without special authorisation from the competent national services. Since the previous report in 2020, no component has been subject to interventions that would impact the property as a whole or the attributes supporting Outstanding Universal Value (OUV). Similarly, there are no projects in the buffer zone that could affect the property.

Concerning the coordination of the 10 French components of the property, since autumn 2017, the Île-de-France regional directorate of cultural affairs (DRAC), a deconcentrated service of the Ministry of Culture, has set up a national steering committee which meets every year under the chairmanship of the regional prefect, appointed coordinating prefect of the series by order of 11 January 2017, whose mandate has been renewed for the period 2022-2027, in order to coordinate the action of the 6 prefects of the regions concerned and bringing together all the partners (owners, managers, local authorities, regional government departments). This national steering committee has a twofold objective: on the one hand, to coordinate the action of the State services and local authorities in the implementation of management plans and the monitoring of development projects within the perimeter of the buffer zones; on the other hand, to provide a coordinated response at the national level to the recommendations of the World Heritage Committee and ICOMOS International for each of the different sites (monitoring indicators and impact studies). This national body was accompanied by the setting up of local steering committees placed under the authority of the prefects of the various regions concerned and led by the correspondents in the DRAC responsible for monitoring the elements of the series in conjunction with the Fondation Le Corbusier, guardian of the moral rights of the architect's work. This coordination work was accompanied in 2022, on the occasion of the French presidency, by the meeting of an extraordinary ICC on 12 July 2022, by video conference, between the 7 States Parties in order to strengthen the coordinated management of the property, in accordance with the provisions of the OUV which expressly invites the States Parties to adopt common approaches to protection, conservation and mediation actions.

With regard to mediation activities, the development of new digital tools, videoconferences and virtual visits (notably in Germany, Argentina, France, Japan and Switzerland) should be noted.

2. States Partys response to the decision of the World Heritage Committee: **Decision 44 COM 7B.152**

[Note: State(s) Party(ies) is/are requested to respond to the requests in the most recent World Heritage Committee decision on this property, paragraph by paragraph].

Item 4: *Concerning the recommendations of the World Heritage Committee on impact studies:*

As impact studies are not provided for by the Heritage Code in France but only by the Environment Code, the Île-de-France Regional Directorate of Cultural Affairs complied with Article 172 of the Operational Guidelines by alerting the Ministry of Culture in early 2019 to the need to inform UNESCO of two projects likely to have an impact on the Outstanding Universal Value (OUV) of the series concerning the Manufacture des Vosges in Saint-Dié and the Housing Unit in Marseille.

Concerning the additional information requested by the World Heritage Centre on 19 October 2020 for the Unité d'Habitation in Marseille regarding "possible damage to views towards and from the listed element", these elements will be communicated within the framework of the preparation of the specifications for the new study for the Michelet development and programming guidelines (OAP), which is underway with the Architect of the Buildings of France (ABF) and the Marseille Metropolitan Authority. This will give rise to a public enquiry in October 2023 and adoption by the City and Metropolis before the end of 2024.

Concerning the Manufacture Saint-Dié des Vosges, planning the construction of an interpretation area allowing the public access to the factory still in operation but closed to visitors, an impact study was transmitted to the World Heritage Centre on 24 June 2020. This study was the subject of a request for supplements following the report by ICOMOS International on the future of the buildings concerned by the project for the new visitor centre and the car park, which should be sent shortly for an opinion.

For all future projects with a potential impact on the Outstanding Universal Value of the property, HIAs (Heritage Impact Assessments) will be established.

Item 5: *Concerning the requests for information on* ***the Capitol Complex in Chandigarh***, the State Party has prepared and provided the HIAs for the HVAC auxiliary structure and multi-storey basement car park projects as annexes. The progress report detailing the potential impacts of the proposed project on the overall development of the Punjab and Haryana High Court is also attached ***in Annex 2***.

Item 6: *Concerning the specific protection measures for the buffer zone of* ***Maison Guiette****,* the measures that apply in the other properties are found in the vicinity of Maison Guiette as specified in ***Annex 3***.

Item 7: *In accordance with paragraph 172 of the Operational Guidelines, describe any potential significant restoration, alteration and/or new construction(s) that may be undertaken within the property, buffer zone(s), corridor(s) or other location(s) where such development could impact on the Outstanding Universal Value (OUV) of the property, including its authenticity and integrity:*

The seven States Parties are informed of the need to inform the World Heritage Centre in advance of any development project likely to have a substantial impact on the OUV of the property and provide for consultation meetings between the various stakeholders concerned in order to ensure that the projects respect

its recommendations. For example, the renovation project for the Le Corbusier school complex in the vicinity of the Villa Savoye in France was the subject of an on-site meeting in June 2022 with the project owner and the project manager in order to frame the project with prescriptions aimed at respecting the property's OUV.

At present, there are no irreversible projects with a potential impact on the outstanding universal value.

3. Public access to the state of conservation report

[Note: This report will be uploaded for public access to the World Heritage Centre's "State of Conservation Information System" (http://whc.unesco.org/fr/soc). If your State Party requests that the full report not be uploaded, only the one-page executive summary, provided for in (1) above, will be uploaded for public access].

States Parties are not opposed to uploading the full report.

7. Signature of the Authority

Allemagne, Argentine, Belgique, France, Inde, Japon, Suisse

Argentina, Germany, Belgium, France, India, Japan, Switzerland

L'Œuvre architecturale de Le Corbusier, une contribution exceptionnelle au Mouvement Moderne

The architectural work of Le Corbusier, an outstanding contribution to the Modern Movement

Rapport sur l'état de conservation des 17 composantes du bien en 2022

Report on the state of conservation of the 17 components of the property in 2022

Annexe 1 - Annex 1

Date d'inscription sur la liste du patrimoine mondial / Date of inscription on the World Heritage List : 2016

Critères / Criteria : (i)(ii)(vi)
Bien / Property : 98,4838 ha
Zone tampon / Buffer zone : 1 409,384 ha
Dossier / File : 1321rev
N46 28 6.29 E6 49 45.61

Maisons de la Weissenhof-Siedlung (1927)
Stuttgart
Allemagne

Houses in the Weissenhof Estate (1927)
Stuttgart
Germany

L'état de conservation du bien est satisfaisant.

The state of conservation of the property is satisfactory.

Avancées et difficultés principales :
Pour l'instant, il n'y a pas de difficultés ni de travaux de restauration en cours.

À l'occasion du prochain centenaire de l'ensemble de la Weissenhofsiedlung (zone tampon), les maisons et les murs seront partiellement rénovés et restaurés dans les années à venir. Il est également prévu de réaménager les jardins et les espaces ouverts, ainsi que de construire un bâtiment d'entrée pour les visiteurs. Il n'existe actuellement aucun plan de rénovation concret pour les deux maisons de Le Corbusier.

Progress and main difficulties:
In the moment there are no difficulties and no restauration works in progress.

For the upcoming 100th anniversary of the entire Weissenhofsiedlung (buffer zone), the houses and the walls will be partially renovated and restored in the coming years. There are also plans to redesign the gardens and open spaces as well as to build an entrance building for the visitors. There are currently no concrete renovation plans for the two houses by Le Corbusier.

Réponse aux observations de la **décision 44 COM 7B.152. :**

- 44 COM 7B.152 **– 4**. - La question de savoir si une EIP (évaluation d'impact sur le patrimoine) doit être réalisée pour le bâtiment d'accueil des visiteurs prévu dans la zone tampon est actuellement à l'étude.

- 44 COM 7B.152 **– 7**. - Nous avons l'intention de nous conformer à cette règle.

Response to the remarks in Decision **44 COM 7B.152.:**

- 44 COM 7B.152 **– 4.** - It is currently being examined whether an HIA (heritage impact assessments) should be carried out for the planned visitor entrance building in the buffer zone.

- 44 COM 7B.152 – 7. - We intend to comply with this rule.

Maison du Docteur Curutchet (1949)
La Plata
Province de Buenos-Aires
Argentine

House of Doctor Curutchet (1949)
Province of Buenos Aires
La Plata
Argentina

L'état de conservation du bien est satisfaisant.

The state of conservation of the property is satisfactory.

Avancées et difficultés principales :

Avancées :
La Commission des monuments nationaux a effectué une étude préliminaire de l'état de conservation du bâtiment et a réalisé les démarches suivantes :

- La Fondation Le Corbusier (FLC) a été sollicitée afin d'obtenir une copie des plans originaux de la Casa Curutchet. Ces documents ont déjà été reçus ;
- Nous avons également saisi la Fondation Le Corbusier pour obtenir les résultats et les rapports de la campagne de recherche stratigraphique effectuée par un spécialiste envoyé par la FLC, dans les 17 propriétés de la série, il y a quelques années. La réponse a été favorable et nous attendons les rapports précités ;
- De même, le collège des architectes de la province de Buenos Aires (CAPBA) a signé un accord avec la faculté des sciences agricoles et forestières dans le but de suivre l'évolution de l'arbre présent dans les locaux de la "Casa Curutchet" et son comportement par rapport à la structure de la construction.

Difficultés :

- Obtenir des fonds de financement pour réaliser les tâches de conservation et de restauration de la Casa Curutchet.

Progress and main difficulties:

Progress:
The National Monuments Commission carried out a preliminary study of the state of conservation of the building and carried out the following steps:

- The Fondation Le Corbusier (FLC) has been asked to obtain a copy of the original plans of the Casa Curutchet. These documents have already been received;
- We also asked the Fondation Le Corbusier for the results and reports of the stratigraphic research campaign carried out by a specialist sent by the FLC in the 17 properties of the series a few years ago. The response was favourable and we are waiting for the above-mentioned reports;
- Likewise, the College of Architects of the Province of Buenos Aires (CAPBA) has signed an Agreement with the Faculty of Agricultural and Forestry Sciences with the aim of monitoring the evolution of the tree present at the premises of "Casa Curutchet" and its behavior in relation to the construction structure.

Difficulties:

- Obtain financing funds to carry out conservation and restoration tasks at Casa Curutchet.

Maison Guiette (1926)
Anvers
Belgique

Maison Guiette (1926)
Antwerp
Belgium

La maison Guiette est actuellement en cours de restauration. Celle-ci se déroule exclusivement du coté extérieur (façades et toits). L'état de conservation de l'intérieur du bien est très satisfaisant.

The Maison Guiette is currently being restored. This is being carried out exclusively on the exterior (facades and roofs). The state of conservation of the interior of the property is very satisfactory.

Avancées majeures :
La restauration fait suite à la dernière restauration de la propriété datant de la fin des années 1980. Elle est conforme au plan de gestion élaboré en 2019.

La restauration se concentre sur l'enveloppe extérieure du bâtiment. Il s'agit principalement de résoudre un certain nombre de problèmes au niveau de la physique du bâtiment et de problèmes techniques (infiltration d'eau, isolation, etc.), et d'accroître la sécurité incendie. En outre, la restauration vise également à s'attaquer à un certain nombre d'interventions moins heureuses du passé, qui ont affecté les détails originaux de Le Corbusier. Cela concerne, par exemple, la lucarne sur le toit-terrasse, ou les dalles de couverture.

Pour guider la restauration, un comité d'orientation a été mis en place en concertation avec la Fondation Le Corbusier et quelques experts nationaux et internationaux. Un certain nombre d'études préliminaires ont également été réalisées, notamment sur la stabilité du bâtiment et la physique du bâtiment. Celles-ci ont déjà été fournies dans le cadre du rapport précédent.

Au niveau des fenêtres, on pensait initialement que plusieurs châssis en acier devaient être remplacés. Toutefois, un examen plus approfondi des châssis pendant les travaux a révélé que la plupart d'entre eux pouvaient être conservés malgré tout.

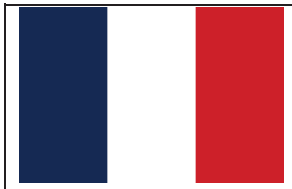
Dans le cadre de la restauration, la couleur des façades de la maison Guiette a également été longuement discutée. Il s'agissait notamment d'examiner la palette de couleurs dans les dessins de Le Corbusier (marron - "sienne brûlée"), ainsi que la finition et la couleur d'origine (gris, en raison de la finition « granilis »). La couleur blanche stérile actuelle est le résultat de la restauration des années 1980, mais elle ne correspond pas à la palette de couleurs utilisée par Le Corbusier. Finalement, il a été décidé de redonner un aspect blanc à la maison, mais ce sera une nuance de blanc plus douce.

La restauration devrait être achevée au printemps 2023.

Major progress:
The restoration follows the last restoration of the property in the late 1980s. It is in line with the management plan developed in 2019.

	The restoration focuses on the outer shell of the building. This mainly involves solving a number of problems relating to building physics and technical problems (water infiltration, insulation, etc.), and increasing fire safety. In addition, the restoration also aims to tackle a number of less fortunate interventions of the past, which have affected Le Corbusier's original details. This concerns, for example, the skylight on the roof terrace, or the roof slabs. To guide the restoration, a steering committee was set up in consultation with the Fondation Le Corbusier and some national and international experts. A number of preliminary studies have also been carried out, notably on the stability of the building and on building physics. These studies have already been provided together with the previous report. With regard to the windows, it was initially thought that several steel frames would have to be replaced. However, closer examination of the frames during the restoration works revealed that most of them could be retained after all. As part of the restoration, the colour of the facades of the Guiette House was also discussed at length. This included looking at the colour palette in Le Corbusier's drawings (brown - 'sienna brûlée'), as well as the original finish and colour of the building (grey, due to the 'granilis' finish). The current sterile white colour is the result of the 1980s restoration, but it does not match the colour scheme used by Le Corbusier. In the end it was decided to restore the house to a white appearance, but it will be a softer shade of white. The restoration is expected to be completed in the spring of 2023. **Concernant le point 6 de la décision 44 COM 7B.152** « *Note également l'absence persistante de mesures de protection pour la zone tampon de la maison Guiette et demande également à l'État partie de Belgique de mettre en place une protection adaptée aux besoins particuliers de l'élément constitutif*) » : L'agence du Patrimoine de Flandre n'est pas d'accord avec l'interprétation qu'une protection adéquate n'est pas en place pour la maison Guiette. Les dispositions légales actuellement en vigueur, déjà mentionnées dans les rapports précédents, sont suffisantes pour garantir que des décisions irréversibles ne soient pas prises sans place pour la consultation nécessaire. Il s'agit également d'un engagement auquel souscrivent toutes les parties concernées (agence du Patrimoine de Flandre, ville d'Anvers, propriétaires, ...). Le fait que le projet pour remplacer un bâtiment voisin est toujours en discussion depuis plusieurs années, et que plusieurs conceptions de ce projet ont été développées entre-temps, en est la meilleure preuve. La Fondation Le Corbusier et les représentants des six autres pays ont d'ailleurs également été consultés dans le passé.

	Il faut aussi se rendre compte du fait que la maison Guiette est – malheureusement – située dans un environnement dense et très dynamique, où il est particulièrement difficile de fixer les évolutions spatiales. Le cadre actuel offre la souplesse nécessaire pour y faire face. Cette position n'empêche pas l'agence du Patrimoine de Flandre de rester attentive aux possibilités de renforcer la zone tampon de la propriété Guiette. Elle étudie actuellement un outil de la législation sur le patrimoine immobilier, à savoir la zone de transition d'un bien protégé. Cette piste sera approfondie dans les prochains mois. **Concerning point 6 of Decision 44 COM 7B.152** *"Also notes the continuing lack of specific protection measures for the Maison Guiette buffer zone and also requests the State Party of Belgium to put in place protection that is tailored to the specific needs of the component":* The Flanders Heritage Agency does not agree with the interpretation that adequate protection is not in place for the Guiette House. The legal provisions currently in force, already mentioned in previous reports, are sufficient to ensure that irreversible decisions are not taken without room for necessary consultation. This is also a commitment to which all parties concerned are committed (Flanders Heritage Agency, City of Antwerp, owners, etc.). The fact that the project to replace a neighbouring building has been under discussion for several years, and that multiple designs for this project have been developed in the meantime, is the best proof of this. The Fondation Le Corbusier and representatives of the six other countries have also been consulted in the past on this particular project. One must also realize that the Guiette House is - unfortunately - located in a dense and highly dynamic environment, where it is particularly difficult to fix spatial developments. The current framework offers the necessary flexibility to cope with this. This position does not prevent the Flanders Heritage Agency from remaining alert to the possibilities of strengthening the buffer zone of the Guiette property. It is currently looking at a tool in the heritage legislation, namely the transition zone of a protected property. This avenue will be explored further in the coming months.



Maisons
La Roche
et Jeanneret (1923)
75016 Paris France

Maisons
La Roche
and Jeanneret (1923)
75016 Paris France

L'état de conservation du bien est globalement très satisfaisant.

The overall state of conservation of the property is very satisfactory.

Avancées majeures :
En 2019, la Fondation Le Corbusier a mandaté l'agence Pierre-Antoine Gatier, architecte en chef des monuments historiques (ACMH), pour établir un cahier d'entretien. Les premières phases de travaux d'entretien ont débuté en 2020 portant principalement sur les menuiseries et sur les peintures intérieures. Ces travaux ont été réalisés sous le contrôle scientifique et technique de la conservation régionale des monuments historiques. Ces travaux d'entretien vont continuer dans les années à venir, parallèlement au lancement de l'étude thermique. Ces opérations devraient bénéficier des subventions de l'État français (ministère de la Culture, Direction régionale des affaires culturelles (DRAC) d'Île-de-France).

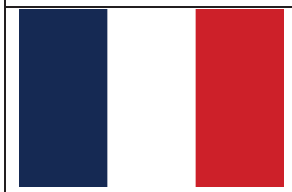
En 2018, la copropriété du square du Docteur Blanche a mené les travaux de réfection de l'allée conduisant aux deux Maisons visant à améliorer la surface du revêtement du sol grâce à la pose de pavés. Ce projet a été effectué sous le contrôle scientifique et technique de l'architecte des bâtiments de France (ABF) territorialement compétant. Une potentielle demande de protection au titre des monuments historiques du portail d'entrée et des grilles de l'allée devrait être examinée lors d'une prochaine assemblée générale des copropriétaires, préalablement à son examen par la DRAC d'Île-de-France. Le portail d'entrée devrait bénéficier prochainement des travaux d'entretien. Cette opération sera suivie par l'ABF.

Enfin, la gestion des espaces verts, incluant le couvert végétal et des grands arbres, faisant partie de l'élément constitutif du bien et de sa zone tampon, sera étudiée avec la Direction de l'urbanisme de la Ville de Paris et devrait faire l'objet d'un schéma directeur dont le principe devra être également approuvé en assemblée générale des copropriétaires.

Réponse aux observations de la **décision 44 COM 7B.152. :**

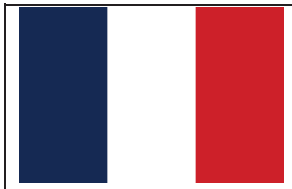
- **4**. – Actuellement, aucun projet relatif à cette composante ou à sa zone tampon ne nécessite pas d'une EIP (évaluation d'impact sur le patrimoine) ;
- **7**. – Actuellement, aucun projet irréversible avec un impact potentiel sur la valeur universelle exceptionnelle n'est prévu.

Major progress:
In 2019, the Fondation Le Corbusier commissioned the agency Pierre-Antoine Gatier, chief architect of historic monuments (ACMH), to draw up a specification of maintenance works. The first phases of maintenance work began in 2020, mainly on the joinery and interior painting. These works were carried out under the scientific and technical control of the regional conservation of historic monuments. These works were carried out under the scientific and technical control of the regional conservation of historic monuments. This maintenance work will continue in the coming years, in parallel with the beginning of the thermal study. These operations should benefit from subsidies from the French State (Ministry of Culture, Regional Directorate of Cultural Affairs (DRAC) of Île-de-France).

	In 2018, the condominium of the Docteur Blanche Square carried out the repair of the alley leading to the two Houses aiming to improve the surface of the floor covering by laying paving stones. This project was carried out under the scientific and technical control of the architect of the buildings of France (ABF) territorially competent. A potential application for the protection of the entrance gate and the gates of the alley as historical monuments should be examined at a forthcoming general meeting of the co-owners, prior to its examination by the DRAC of Île-de-France. The entrance gate should benefit from maintenance work in the near future. This operation will be monitored by the ABF. Finally, the management of the green spaces, including the vegetation cover and large trees, forming part of the component element of the property and its buffer zone, will be studied with the Urban Planning Department of the City of Paris and should be the subject of a master plan, the principle of which will also have to be approved by the general meeting of co-owners. Response to the comments of Decision 44 COM 7B.152.: • **4**. - At present, no project related to this component or its buffer zone requires a HIA (heritage impact assessment); • **7**. - Currently, no irreversible projects with a potential impact on the outstanding universal value are planned.
 **Immeuble locatif à la Porte Molitor (1931)** **92100 Boulogne-Billancourt et 75016 Paris** **France**	**L'état de conservation de l'immeuble est globalement satisfaisant**. **The state of conservation of the building is generally satisfactory.** Avancées majeures : Les travaux de restauration des façades et des parties communes devraient commencer bientôt, pour une durée prévisionnelle de 3 ans. À la suite des études préalables, menées par Pierre Antoine Gatier, architecte en chef des monuments historiques (ACMH), la copropriété lui a confié la maîtrise d'œuvre des travaux de restauration. Le comité d'experts de la Fondation Le Corbusier s'est réuni en présence des experts de l'œuvre, des propriétaires, de la conservatrice des monuments historiques et des architectes des bâtiments de France afin de donner un avis sur ce projet. À la demande du comité des experts de la Fondation Le Corbusier, et grâce au soutien financier de la conservation régionale des monuments historiques d'Île-de-France, une étude thermique a été réalisée, notamment afin d'apporter des informations complémentaires pour la restauration ou remplacement des fenêtres, par le bureau d'études *TESS*.

Rental building at the Molitor Gate (1931) 92100 Boulogne-Billancourt and 75016 Paris France	L'autorisation de travaux portant sur la restauration des façades et des parties communes été délivrée par la DRAC d'ÎDF en 2021. Ces travaux seront exécutés en plusieurs phases, à partir de la fin de l'année 2022, sous le contrôle scientifique et technique des services patrimoniaux de la DRAC d'Île-de-France et bénéficieront d'un soutien financier de cette dernière à hauteur du 40% des montants totaux. **L'état de conservation de l'appartement est très satisfaisant** à la suite des études préalables, menées en 2014, et des travaux, conduits de 2016 à 2018, par François Chatillon, architecte en chef des monuments historiques (ACMH). Des travaux réguliers d'entretien semblent maintenant nécessaires. Un cahier d'entretien et des propositions d'interventions sont à l'étude avec l'architecte en charge des travaux et la conservation régionale des monuments historiques. Major progress: Restoration work on the facades and common areas should begin soon, and is expected to last three years. Following the preliminary studies carried out by Pierre Antoine Gatier, chief architect of historical monuments (ACMH), the co-ownership has entrusted him with the project management of the restoration work. The Fondation Le Corbusier's committee of experts met in the presence of experts on the work, the owners, the curator of historic monuments and the architects of the buildings of France in order to give an opinion on this project. At the request of the committee of experts of the Le Corbusier Foundation, and thanks to the financial support of the Regional Conservation of Historic Monuments of Île-de-France, a thermal study was carried out, in particular in order to provide additional information for the restoration or replacement of the windows, by the study office *TESS*. Authorisation for the restoration of the façades and common areas was issued by the DRAC of Île-de-France in 2021. This work will be carried out in several phases, starting at the end of 2022, under the scientific and technical control of the heritage services of the DRAC of Île-de-France and will benefit from financial support from the latter up to 40% of the total amount. **The state of conservation of the flat is very satisfactory** following the preliminary studies carried out in 2014 and the work carried out from 2016 to 2018 by François Chatillon, chief architect of historic monuments (ACMH. Regular maintenance work now seems necessary. A maintenance booklet and proposals for interventions are being studied with the architect in charge of the works and the regional conservation of historic monuments.

	Réponse aux observations de la **décision 44 COM 7B.152. :** • **4**. – Actuellement, aucun projet relatif à cette composante ou à sa zone tampon ne nécessite pas d'une EIP (évaluation d'impact sur le patrimoine) ; • **7**. – Actuellement, aucun projet irréversible avec un impact potentiel sur la valeur universelle exceptionnelle n'est prévu. Response to the comments of Decision 44 COM 7B.152.: • **4**. - At present, no project related to this component or its buffer zone requires a HIA (heritage impact assessment); • **7**. - Currently, no irreversible projects with a potential impact on the outstanding universal value are planned.



Villa Savoye et loge du jardinier (1928)
Poissy
France

The Villa Savoye and the gardener's lodge (1928)
Poissy
France

État de conservation globalement satisfaisant pour la villa et à l'étude pour la loge.

The state of conservation of the villa is generally satisfactory and the lodge is under study.

Avancées majeures :

Loge du jardinier :
Le projet de restauration globale de la villa demeurait suspendu aux conclusions des études-diagnostics de la loge commandé par le Centre des Monuments Nationaux (CMN) en 2018 à Pascal Prunet, architecte en chef des monuments historiques (ACMH). Il visait à identifier et expliquer les causes des pathologies des bétons observées sur la loge depuis l'achèvement de sa restauration en 2016, et à proposer un parti d'intervention. Les résultats de ces études diagnostic sont en effet primordiaux pour permettre au CMN de définir le plus finement possible les objectifs et le parti de restauration de la villa et d'intervention sur la loge. Ce diagnostic a été rendu par Pascal Prunet, ACMH, en avril 2022. Il a été communiqué à la DRAC d'Île-de-France en mai 2022. Compte tenu de l'ampleur des prescriptions émises par l'ACMH, il a été décidé de soumettre ce diagnostic à la Fondation Le Corbusier et proposé au CRMH qui l'a accepté de présenter le sujet en commission nationale de l'architecture et du patrimoine.

Le CMN a poursuivi sa surveillance, sous le contrôle scientifique et technique de la DRAC d'Île-de-France, sur la loge avec la fin de l'analyse des pathologies et la pose en décembre 2021 d'un dispositif de protection contre les variations climatiques (notamment celles qui provoquent l'introduction des hydrométries dans les maçonneries) en forme de parapluie pour éviter les effets de serre. L'ouvrage de protection a été réceptionné le 25 février 2022. Ce dispositif devrait contribuer à terme à l'établissement du programme de restauration générale de la Villa compte tenu de la parenté constructive des 2 édifices.

La Villa :
Des travaux de gros entretien ont débuté en octobre 2022 pour une durée de 3 mois (150 000 € TTC). Ils concernent les allées extérieures (sols des allées gravillonnées et recharge du substrat gravillonné) les peintures intérieures (poursuite en 2022 des travaux de remise au propre des intérieurs lancés en 2015 au 1er et 2ème étage ; étude stratigraphique documentant l'ensemble des couches picturales intérieures ayant fait l'objet d'une autorisation de travaux instruite par la DRAC en mars 2022), le nettoyage des sols carrelés, les parquets, les portes (4 des 8 portes extérieures et 1 porte intérieure seront déposées pour restauration), les menuiseries intérieures, ainsi que le traitement de la corrosion qui touche ponctuellement le réseau de chauffage et une partie des montants métalliques de la verrière du patio.

Zone tampon :

- le projet de requalification de la Cité scolaire Le Corbusier piloté par la Direction des Grands Projets de la région d'Île-de-France, a fait l'objet d'une nouvelle étude de faisabilité en 2020 préalablement à la désignation en 2021 du lauréat du concours de maîtrise d'œuvre pour la rénovation globale de la Cité Mixte dont le chantier prévu en 2 tranches devrait s'étaler sur 36 mois (2025). Globalement le projet respecte l'architecture de la cité scolaire, labellisée Architecture Contemporaine Remarquable, et contribue à

	améliorer l'environnement paysager, l'ensemble des modifications proposées étant situées à l'ouest et du côté opposé à la Villa. Toutefois, le projet doit encore intégrer les préconisations de la DRAC, notamment en ce qui concerne la réfection de la toiture et des façades en mauvais état de conservation et situées en co-visibilité de la Villa (préconisations rappelées en 2022 à la maîtrise d'œuvre) ; -le projet de rénovation du quartier de Beauregard situé en partie dans la zone tampon et inscrit en quartier prioritaire politique de la ville prévoit un programme d'aménagement pour l'ensemble du secteur urbain de Beauregard (développement de l'offre immobilière conjuguant réhabilitations, constructions neuves et valorisation paysagère du site) qui devrait voir le jour d'ici 2026. L L'architecte des bâtiments de France (ABF) a émis un avis favorable sur le permis de construire, la rénovation projetée proposant un langage architectural sobre aux barres d'immeubles concernées. Major progress: **Gardener's lodge:** The overall restoration project for the villa was still pending the conclusions of the diagnostic studies of the lodge commissioned by the National Monuments Centre (CMN) in 2018 from Pascal Prunet, chief architect of historic monuments (ACMH). It aimed to identify and explain the causes of the concrete pathologies observed on the lodge since the completion of its restoration in 2016, and to propose an intervention plan. The results of these diagnostic studies are indeed essential to enable the CMN to define as precisely as possible the objectives and approach to the restoration of the villa and intervention on the lodge. This diagnosis was made by Pascal Prunet, ACMH, in April 2022. It was communicated to the DRAC of Île-de-France in May 2022. Given the extent of the prescriptions issued by the ACMH, it was decided to submit this diagnosis to the Fondation Le Corbusier and proposed to the CRMH, which accepted it, to present the subject to the national commission for architecture and heritage. The CMN continued its surveillance, under the scientific and technical control of the DRAC of Île-de-France, on the lodge with the end of the analysis of pathologies and the installation in December 2021 of a protective device against climatic variations (in particular those that cause the introduction of hydrometry in the masonry) in the form of an umbrella to avoid greenhouse effects. The protective structure was accepted on 25 February 2022. This device should eventually contribute to the establishment of the general restoration programme for the Villa, given the constructive similarity of the two monuments. The Villa: Major maintenance work began in October 2022 for a period of 3 months (€150,000 including tax). They concern the exterior walkways (gravelled walkway floors and recharging of the gravelled substrate), the interior paintings (continuation in 2022 of the interior cleaning work started in 2015 on the 1st and 2nd floors; stratigraphic study documenting all of the interior pictorial layers, for which a work permit was issued by the DRAC in March 2022), the cleaning of the tiled floors, the parquet floors, the doors (4 of the 8 exterior doors and 1 interior door will be removed for restoration), the interior woodwork, as well as the treatment of the corrosion that is occasionally affecting the heating network and part of the metal uprights of the patio glass roof.

Buffer zone:
-The project for the requalification of the City of Le Corbusier schools, piloted by the Ile-de-France region's Major Projects Department, was the subject of a new feasibility study in 2020 prior to the designation in 2021 of the winner of the project management competition for the overall renovation of the mixed-use city, the construction of which is planned to take place over 36 months (2025) in two phases. Overall, the project respects the architecture of the school complex, which has been awarded the " Remarkable Contemporary Architecture " label, and contributes to improving the landscape environment, with all of the proposed modifications located to the west and on the opposite side of the Villa. However, the project still needs to integrate the recommendations of the DRAC, in particular concerning the repair of the roof and facades in a poor state of conservation and located in co-visibility with the Villa (recommendations reminded in 2022 to the project management);

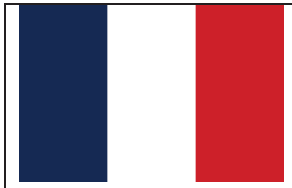
-The renovation project for the Beauregard district, which is partly located in the buffer zone and registered as a priority urban policy district, provides for a development programme for the whole of the Beauregard urban sector (development of the property offer combining rehabilitation, new construction and landscape enhancement of the site) which should be completed by 2026. The architect of the buildings of France (ABF) has issued a favourable opinion on the building permit, as the planned renovation proposes a sober architectural language for the building blocks concerned.

Réponse aux observations de la **décision 44 COM 7B.152. :**

- **4**. – Pour tous les futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien seront établies des EIP (évaluations d'impact sur le patrimoine) ;
- **7**. – Actuellement, aucun projet irréversible avec un impact potentiel sur la valeur universelle exceptionnelle n'est prévu.

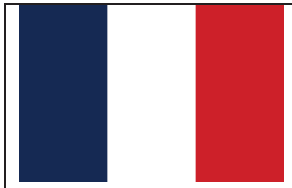
Response to the comments of Decision 44 COM 7B.152.:

- **4**. - For all future projects with a potential impact on the Outstanding Universal Value of the property, HIAs (Heritage Impact Assessments) will be established;
- **7**. - Currently, no irreversible projects with a potential impact on the outstanding universal value are planned.

 **Manufacture à Saint-Dié (1946) Saint-Dié-des-Vosges France** **Manufacture in Saint-Dié (1946) Saint-Dié-des Vosges France**	**En bon état de conservation**, le bâtiment continue à être exploité pour sa fonction d'origine, par la même entreprise de bonneterie qui produit pour la haute couture. C'est un bâtiment dont l'état exprime cette continuité d'activité. The building is in a **good state of conservation** and continues to be used for its original function by the same hosiery company that produces for high fashion. It is a building whose condition expresses this continuity of activity. Avancées majeures : La Direction régionale des affaires culturelles (DRAC) Grand Est suit ce monument depuis son classement au titre des monuments historiques. Elle accompagne, conseille et soutient financièrement le propriétaire dans sa volonté de mieux conserver et de mettre en valeur son édifice. Le plan de circulation et de stationnement aux abords du site sera modifié. Ce projet est porté par la commune, dans le cadre du programme *Cœur de Ville*, avec la suppression du stationnement côté rue, la création de parkings déportés par la préemption de terrains actuellement à vendre. Cette politique foncière permettra également de créer des espaces plus importants dédiés aux piétons dans le périmètre du site afin de permettre au public de découvrir de manière plus aisée depuis l'espace public l'architecture de Le Corbusier. Ce projet, en abord du monument historique et en zone tampon d'une composante du bien du patrimoine mondial, est suivi par l'unité départementale de l'architecture et du patrimoine des Vosges (DRAC Grand Est). Le propriétaire souhaite créer des cônes de vision sur la façade sur cour et d'ouvrir un espace d'interprétation qui permettrait de compenser pour le public les difficultés d'accès à l'intérieur de l'usine (liées à la sécurité et à la confidentialité d'un site industriel). Ce projet sera porté par l'association *LC 48* créée par le propriétaire. Une étude diagnostic sur l'ensemble du bâtiment a été confiée à l'architecte Aurélie Husson à l'été 2022. L'objectif est d'avoir en référence un état zéro du bâti en 2022 ainsi que des projections de travaux d'entretien à court et moyen terme mais aussi de déterminer les points de faiblesse sur lesquels il convient de porter une attention particulière. Cinq projets en cours : 1. Campagne de remplacement des menuiseries sur les niveaux de production de l'usine, 6eme tranche sous la maitrise d'œuvre de l'architecte du patrimoine Aurélie Husson ; 2. Le projet de centre d'interprétation. C'est un projet d'architecture sous la maitrise d'ouvrage du propriétaire de l'usine. Il a dans un premier temps suggéré à plusieurs cabinets d'architecture de renommée mondiale de lui proposer un projet. Sur cette base, une étude d'impact commandée par la DRAC à destination de ICOMOS a été rédigée par l'architecte du patrimoine Aurélie Husson. Le

	projet a été freiné par l'épisode de COVID mais finalement il a été confié à l'agence d'architecture norvégienne Snøhetta. Dans l'intervalle, ICOMOS, en réponse à l'étude d'impact, a demandé des précisions complémentaires sur l'avancement du projet. Cette réponse est en cours de rédaction par la DRAC ; 3. Un projet de mise en valeur des abords immédiats du bâtiment est en cours de finalisation sous la maitrise d'ouvrage de la commune et sous la maitrise d'œuvre de l'architecte du patrimoine Aurélie Husson ; 4. Le site patrimonial remarquable de Saint-Dié-des-Vosges dont le périmètre a été approuvé en commission nationale du patrimoine et de l'architecture (CNPA) début 2019, en est au démarrage de la seconde phase avec un début des études en juillet 2020, sous la maitrise d'œuvre de l'architecte du patrimoine Aurélie Husson ; 5. Protection au titre des monuments historiques du bâtiment des sheds, un diagnostic général a été réalisé. Il devrait déboucher sur la programmation de travaux pluriannuels. Major progress: The Regional Directorate of Cultural Affairs (DRAC) Grand Est has been monitoring this monument since it was classified as a historical monument. It accompanies, advises and financially supports the owner in his desire to better conserve and enhance his building. The traffic and parking plan around the site will be modified. This project is supported by the municipality, as part of the Heart of the City program, with the removal of street-side parking, the creation of off-site car parks through the pre-emption of land currently for sale. This land policy will also make it possible to create larger spaces dedicated to pedestrians within the perimeter of the site in order to allow the public to discover Le Corbusier's architecture more easily from the public space. This project, approaching the historic monument and in the buffer zone of a component of the World Heritage property, is being monitored by the Vosges departmental unit for architecture and heritage (DRAC Grand Est). The owner wishes to create viewpoints on the courtyard façade and to open up an interpretation area which would compensate for the difficulties of access to the interior of the factory for the public (linked to the security and confidentiality of an industrial site). This project will be supported by the *LC 48* association created by the owner. A diagnostic study of the entire building has been commissioned from the architect Aurélie Husson in the summer of 2022. The objective is to have a baseline of the building in 2022 as well as projections for short and medium terms maintenance work, but also to determine the weak points on which particular attention should be paid.

	Five ongoing projects: 1. Campaign to replace the joinery on the factory's production levels, 6th stage, under the supervision of the heritage architect Aurélie Husson; 2. The interpretation centre project. It is an architectural project under the control of the factory owner. Initially, he asked several world-renowned architectural firms to propose a project. On this basis, an impact study commissioned by the DRAC for ICOMOS was drawn up by the heritage architect Aurélie Husson. The project was slowed down by the COVID episode but finally it was entrusted to the Norwegian architectural firm Snøhetta. In the meantime, ICOMOS, in response to the impact study, has requested further details on the progress of the project. This response is currently being drafted by the DRAC; 3. A project to enhance the immediate surroundings of the building is being finalised under the direction of the commune and the supervision of the heritage architect Aurélie Husson; 4. The remarkable heritage site of Saint-Dié-des-Vosges, whose perimeter was approved by the National Commission for Heritage and Architecture (CNPA) at the beginning of 2019, is at the start of the second phase with the beginning of studies in July 2020, under the direction of the heritage architect Aurélie Husson; 5. Protection of the sheds building as historical monuments, a general diagnosis has been carried out. It should lead to the programming of multi-year works. Réponse aux observations de la **décision 44 COM 7B.152. (4. et 7.) :** Le Centre du patrimoine mondial sera de nouveau informé des futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien. Response to the comments of Decision 44 COM 7B.152. (4. and 7.): The World Heritage Centre will again be informed of future projects with a potential impact on the outstanding universal value of the property.



Unité d'habitation à Marseille (1945) Marseille France

Housing unit in Marseille (1945) Marseille France

L'état de conservation est satisfaisant.

The state of conservation is satisfactory.

Avancées majeures :

Les travaux de restauration à venir en 2023 concernent le poste de collecte des ordures ménagères.

Extension de protection au titre des monuments historiques :
Dossier présenté devant la commission régionale du patrimoine et de l'architecture (CRPA) le 9 avril 2019 : avis favorable à l'extension de l'inscription au titre des monuments historiques au parc et au poste de collecte des ordures ménagères et souhait de classement au titre des monuments historiques du parc et du poste de collecte des ordures ménagères. Le dossier sera présenté en commission nationale du patrimoine et de l'architecture (CNPA) le 1er décembre 2022 pour le classement au titre des monuments historiques de cette extension de protection.

Abords de la cité radieuse (**zone tampon**) et orientations d'aménagement et de programmation (OAP) :
À la suite des conclusions du commissaire enquêteur dans le cadre de l'enquête publique liée à la révision du plan local d'urbanisme intercommunal (PLUi) et du rapport de l'inspection générale des patrimoines, une modification du PLUi est en cours d'élaboration par la Métropole Aix-Marseille-Provence en liaison avec la Ville de Marseille. Elle devrait inclure une nouvelle OAP; celle-ci donnera lieu à enquête publique en octobre 2023 et adoption par la Ville et la Métropole avant fin 2024, avant la fin du périmètre d'attente.

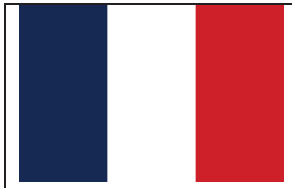
Major progress:

The restoration work to be carried out in 2023 concerns the rubbish collection station.

Extension of protection as historical monuments:
File presented before the regional commission for heritage and architecture (CRPA) on 9 April 2019: favourable opinion on the extension of the registration as historical monuments to the park and the household waste collection station and wish for the classification as historical monuments of the park and the household waste collection station. The file will be presented to the National Commission for Heritage and Architecture (CNPA) on 1 December 2022 for the classification of this extension of protection as a historic monument.

Surroundings of the Cité Radieuse (**buffer zone**) and development and programming guidelines (OAP):
Following the conclusions of the investigating commissioner in the context of the public enquiry linked to the revision of the inter-municipal local urban plan (PLUi) and the report of the General Heritage Inspectorate, a modification of the PLUi is being prepared by the Aix-Marseille-Provence Metropolis in conjunction with the City of Marseille. It should include a new OAP; this will give rise to

	a public enquiry in October 2023 and adoption by the City and Metropolis before the end of 2024, before the end of the waiting period. Réponse aux observations de la **décision 44 COM 7B.152. (4. et 7.) :** Le Centre du patrimoine mondial sera informé des futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien. Response to the comments of Decision 44 COM 7B.152. (4. and 7.): The World Heritage Centre will be informed of future projects with a potential impact on the outstanding universal value of the property.



Cabanon de Le Corbusier (1951) Roquebrune-Cap-Martin France

Cabanon of Le Corbusier (1951) Roquebrune-Cap-Martin France

L'état de conservation est satisfaisant.

The state of conservation is satisfactory.

Avancées majeures :

Extension de protection au titre des monuments historiques :
Le Cabanon est classé au titre des monuments historiques depuis le 3 septembre 1996.
Par ailleurs, le site Corbuséen, propriété du Conservatoire du Littoral, est classé au titre des sites (loi 1930).
En zone tampon :
La Villa E 1027 et ses jardins sont classés MH par arrêté du 27 mars 1999.
L'Étoile de mer, les Unités de camping, la baraque atelier et le sol des deux parcelles d'assise sont classés par arrêté du 29 septembre 2021 suite à l'examen du dossier d'extension de protection présenté en commission nationale du patrimoine et de l'architecture (CNPA).

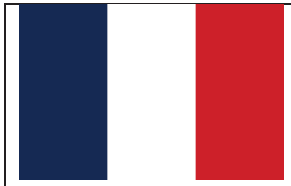
Suivi de l'état de conservation général de l'élément constituant le bien :
Le Centre des monuments nationaux (CMN) est unique gestionnaire depuis le 1er avril 2020. À ce titre, il prend à sa charge l'exploitation du site en termes de ressources humaines, d'animation, d'entretien et de maintenance.

Le CMN a mis en place des contrats de maintenance (anti-intrusion, SSI (systèmes de sécurité incendie), PCCI (protection cathodique par courant imposé), dératisation/désinsectisation, etc.) et la mise en place d'un carnet d'entretien.
La démarche de constat d'état au premier trimestre 2021 sur la Villa a été étendue au Cabanon, à la baraque-atelier ainsi qu'aux Unités de Camping.
L'opération a permis de dresser un bilan général de l'état du Cabanon, depuis les altérations d'usage jusqu'à l'état sanitaire.
Ce document pourra servir de support dans le cadre de l'élaboration du cahier des charges d'une éventuelle campagne de restauration.
Dans cette attente, il a été suivi de petites réparations, essentiellement le dépoussiérage intérieur et extérieur, la refixation des plaques d'isorel et de contreplaqué et le nettoyage de la serrure du Cabanon.

Major progress:

Extension of protection as a historical monument:
The Cabanon has been classified as a historical monument since 3 September 1996.
In addition, the Corbuséen site, owned by the Conservatoire du Littoral, is classified as a site (law 1930).
In the buffer zone:

	The Villa E 1027 and its gardens are classified as MH by decree of 27 March 1999. The Étoile de mer, the camping units, the workshop hut and the ground of the two plots of land are classified by order of 29 September 2021 following the examination of the file for the extension of protection presented to the National Commission for Heritage and Architecture (CNPA). **Monitoring of the general state of conservation of the property:** The National Monuments Centre (CMN) has been the sole manager since 1 April 2020. As such, it is responsible for the operation of the site in terms of human resources, animation, upkeep and maintenance. CMN has set up maintenance contracts (anti-intrusion, SSI (fire safety systems), PCCI (impressed current cathodic protection), deratting /pest control, etc.) and a maintenance logbook. The condition report for the first quarter of 2021 on the Villa has been extended to the Cabanon, the workshop barracks and the Camping Units. The operation enabled a general assessment of the state of the Cabanon, from alterations in use to the state of health. This document could be used as a basis for drawing up the specifications for a possible restoration campaign. In the meantime, minor repairs have been carried out, mainly dusting the interior and exterior, refixing the isorel and plywood panels and cleaning the lock of the Cabanon. Réponse aux observations de la **décision 44 COM 7B.152. (4. et 7.) :** Le Centre du patrimoine mondial sera informé des futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien. Response to the comments of Decision 44 COM 7B.152. (4. and 7.): The World Heritage Centre will be informed of future projects with a potential impact on the outstanding universal value of the property.



Couvent Sainte-Marie-de-la-Tourette (1953) Éveux France

Sainte-Marie-de-la-Tourette Convent (1953) Éveux France

L'état de conservation est satisfaisant.

The state of conservation is satisfactory.

Avancées majeures :

Le chantier de restauration générale a été terminé en 2012, mais des problèmes d'étanchéité, constatés en 2017 et 2018, notamment au niveau de l'atrium et de la pyramide, nécessitent des travaux d'entretien. Pour ne pas entrer dans un cycle récurent de réparations mal maîtrisables, et avec la nécessité d'un arbitrage collégial intégrant la DRAC Auvergne-Rhône-Alpes et la Fondation Le Corbusier dans la recherche de solutions pérennes, il a été décidé la prise en charge d'une étude fondamentale en 2021, relative à la structure d'étanchéité. Pour permettre cette étude, les premières opérations d'entretien ont été conduites : enlèvement des terres de l'atrium ; étanchéité provisoire de l'atrium, dans l'attente de l'étude de diagnostic commandée à RLA ; entretien des canalisations verticales. Un cahier d'entretien a été conçu par l'agence RL&A en 2019, dont le processus de validation est en cours (ralenti par la crise sanitaire). Une réflexion est en cours sur les pistes de remplacement du système de chauffage, d'origine et dysfonctionnel (remplacement par des modèles approchants ou relance de la chaîne de production).

Major progress:

The general restoration work was completed in 2012, but waterproofing problems, noted in 2017 and 2018, particularly in the atrium and pyramid, require maintenance work. In order not to enter into a recurring cycle of poorly controllable repairs, and with the need for collegial arbitration involving the DRAC Auvergne-Rhône-Alpes and the Fondation Le Corbusier in the search for permanent solutions, it was decided to undertake a fundamental study in 2021, relating to the waterproofing structure. To enable this study to be carried out, the first maintenance operations have been carried out: removal of earth from the atrium; temporary waterproofing of the atrium, pending the diagnostic study commissioned from RLA; maintenance of the vertical pipes.

A maintenance booklet has been designed by the RL&A agency in 2019, the validation process of which is underway (slowed down by the health crisis).

Consideration is being given to ways of replacing the original, dysfunctional heating system (replacement by similar models or re-launching the production line).

Réponse aux observations de la **décision 44 COM 7B.152. (4. et 7.) :** Le Centre du patrimoine mondial sera informé des futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien.

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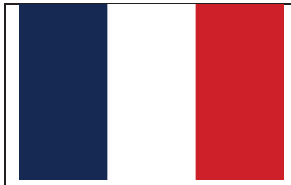

Maison de la Culture à Firminy (1955)
Firminy
France

House of Culture in Firminy (1955)
Firminy
France

L'état de conservation est satisfaisant (chantier de restauration générale achevé en 2012).

The state of conservation is satisfactory (general restoration work completed in 2012).

Avancées majeures :

En 2022-2023 va être réalisé le remplacement du système de sécurité incendie (SSI).
Il a été proposé en 2018 de lancer un important travail de réalisation d'un inventaire raisonné, avec critique d'authenticité, des objets mobiliers de la Maison de la Culture (accompagné financièrement par la DRAC Rhône-Alpes), en partenariat avec l'Université et en vue de leur classement comme « ensemble historique mobilier » et de l'attachement à perpétuelle demeure, dispositions permises par les mesures inscrites dans la loi n° 2016-925 du 7 juillet 2016 relative à la liberté de la création, à l'architecture et au patrimoine.
La nouvelle municipalité et la conservatrice du dite Le Corbusier prévoient un important chantier de réflexion sur la valorisation du site Le Corbusier (bien UNESCO et sa zone-tampon), avec de nombreux projets : accueil de manifestations au stade dans le cadre de la coupe du monde de rugby et des JO 2024, expositions, parcours touristique (bénéficiant de financements exceptionnels de la Région), lancement d'une étude de diagnostic sanitaire et d'une étude de programmation sur la piscine Wogenscky en vue de l'installation d'un centre d'interprétation du site Le Corbusier UNESCO à l'horizon 2026. La DRAC est partenaire de ces réflexions.

Major progress:

In 2022-2023 the fire safety system (SSI) will be replaced.
It was proposed in 2018 to launch an important work of realization of a reasoned inventory, with critique of authenticity, of the movable objects of the House of Culture (financially supported by the DRAC Rhône-Alpes), in partnership with the University and with a view to their classification as a "movable historic ensemble" and attachment in perpetuity, provisions allowed by the measures inscribed in the law n° 2016-925 of July 7, 2016 relative to the freedom of creation, architecture and heritage.
The new municipality and the curator of the Le Corbusier site are planning a major project to enhance the value of the Le Corbusier site (UNESCO property and its buffer zone), with numerous projects: hosting events at the stadium in the context of the Rugby World Cup and the 2024 Olympic Games, exhibitions, a tourist trail (benefiting from exceptional funding from the Region), the launch of a health diagnosis study and a programming study on the Wogenscky swimming pool with a view to setting up an interpretation centre for the Le Corbusier UNESCO site by 2026. The DRAC is a partner in these discussions.

Réponse aux observations de la **décision 44 COM 7B.152. (4. et 7.) :** Le Centre du patrimoine mondial sera informé des futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien.

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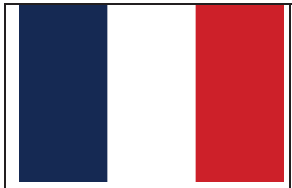


Chapelle Notre-Dame-du-Haut (1950) Ronchamp France

Chapel of Notre-Dame-du-Haut (1950) Ronchamp France

L'état de conservation de la chapelle est globalement satisfaisant. Toutefois, la chapelle nécessite des travaux de restauration des bétons.

The state of conservation of the chapel is generally satisfactory. However, the chapel requires concrete restoration work.

Avancées majeures :

Des désordres sur les parements en béton (fissures, infiltrations), ont été examinés dans le cadre des étudiés préalables, menées par M. Richard Duplat, architecte en chef des monuments historiques (ACMH) en 2005 et en 2009. À l'issue de ces études, une phase expérimentale de traitement des bétons et de la vitrerie est lancée de 2015 à 2017. Cette phase expérimentale a été suivie par le comité scientifique international dédié.

Après la phase expérimentale les travaux de restauration des façades puis des intérieurs ont débuté en décembre 2020. Le nouveau découpage prévoit 4 tranches sur 37 mois (dont les 3 premières concernant les extérieurs doivent s'achever au printemps 2023) :

- La 1ère tranche portant sur la façade sud et la coque en béton permettra la validation définitive des protocoles de traitement des bétons et de la remise en peinture. Cette phase comporte des mesures de protection provisoire sur l'abri du pèlerin et la maison du chapelain ;
- La seconde tranche concerne la façade ouest ;
- La troisième tranche concernera la façade est et la tour sud-ouest ;
- La quatrième tranche portera sur les intérieurs.

Le comité scientifique sera réuni tout au long du chantier, des actions de valorisation et de médiation sont prévues pendant le chantier.

Extension de protection au titre des monuments historiques :
La DRAC Bourgogne-Franche-Comté a instruit un complément de protection du mobilier de la chapelle et de ses bâtiments annexes (arrêté d'inscription en date du 30 décembre 2019) et a programmé des mesures conservatoires sur les objets récemment inscrits.

La protection du mobilier (chapelle et bâtiments annexes) a été complétée : la commission nationale du patrimoine et de l'architecture a donné un avis favorable en juin 2021 sur les propositions de classement de plusieurs objets avec pour certains d'entre eux l'adoption d'une protection comme ensemble historique mobilier et d'une servitude de maintien dans les lieux (maquette, dessins autographes, mobilier de l'abri des pèlerins et de la maison du gardien, mobilier et éclairages fonctionnels dans la chapelle).

En cours de chantier, le réseau électrique de la Chapelle a montré ses faiblesses. Il doit être repris et occasionnera des dépenses imprévues pour l'association. Les conséquences sur la campagne de restauration sont encore à préciser.

L'Association *Œuvre Notre-Dame-du-Haut (AONDH),* propriétaire de la chapelle, envisage ensuite de procéder à la restauration de l'abri des pèlerins et la maison du chapelain.

Les abords (zone tampon) :

- Étude sur l'aire d'influence paysagère (AIP) :

La direction régionale de l'environnement, de l'aménagement et du logement (DREAL) et la DRAC ont diligenté une étude d'aire d'influence paysagère du site au regard des projets éoliens qui a été rendue fin 2019.Il s'agit d'un document d'aide à l'instruction et à la décision pour les services de l'État. Il servira de base pour échanger avec les porteurs de projets éoliens pour définir le degré d'acceptabilité d'une implantation dans l'horizon de la Chapelle.

- Site classé de la colline de Bourlémont :

La DREAL pilote une étude d'opportunité du classement de la colline de Bourlémont, pour renforcer la protection de la zone tampon. L'étude vise à vérifier les critères du classement au regard du code de l'Environnement. L'éventuel classement n'aboutirait que dans quelques années. Le cahier de gestion du site permettrait de porter un projet de paysage pour le massif boisé, la couronne sommitale et les abords immédiat de la chapelle. La première phase de diagnostic de cette étude achevée, une inspection générale du Ministère de la Transition Écologique (CGEDD) sera sollicitée au cours de l'année 2022, préalablement à la définition plus précise du périmètre du site classé et à la consultation formelle des acteurs locaux.

-Gestion de la « calotte sommitale »

Après l'aménagement foncier agricole et forestier, la nouvelle maîtrise foncière par l'AONDH permet d'envisager un projet de gestion cohérent (les vues, le patrimoine végétal...).

Il est signalé que la délimitation officielle du bien ne correspond plus au nouveau tracé parcellaire.

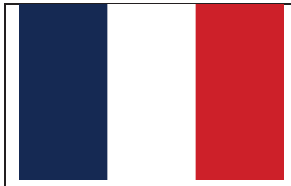
Il a été convenu de produire en 2022 un cahier des charges pour recruter un cabinet qui formalisera un document de gestion sur le moyen et long terme. La méthode s'inspirera de celle des plans simples de gestion sylvicole, en intégrant les espaces non bâtis non forestiers. Les sujets comme l'entretien des panoramas, le mobilier extérieur, la mise en lumière… seront abordés. Ce sera une composante du cahier de gestion en cas de classement du site. L'État accompagnera financièrement l'association propriétaire.

-Définition d'un périmètre délimité des abords (PDA) :

Complétant le site classé, la création d'un PDA est prévue *via* le plan local d'urbanisme intercommunal (PLUi). Il concernera le cœur du bourg et les 2 perspectives urbaines axées sur la chapelle. La zone tampon serait entièrement couverte (inclusion de constructions isolées situées hors du site classé). Le hameau de Mourière (vue frontale depuis la façade nord de la chapelle) pourrait être inclus.

	Major progress: Disorders on the concrete facings (cracks, infiltrations) were examined in the framework of preliminary studies carried out by Mr. Richard Duplat, chief architect of historical monuments (ACMH) in 2005 and 2009. Following these studies, an experimental phase of treatment of the concrete and glazing was launched from 2015 to 2017. This experimental phase was monitored by the dedicated international scientific committee. After the experimental phase, restoration work on the façades and then the interiors began in December 2020. The new breakdown provides for 4 phases over 37 months (the first 3 of which, concerning the exteriors, should be completed in the spring of 2023): • The first phase, which concerns the southern facade and the concrete shell, will allow the definitive validation of the concrete treatment protocols and the repainting. This phase includes temporary protection measures for the pilgrim's shelter and the chaplain's house; • The second phase concerns the western façade; • The third stage will concern the east façade and the south-west tower; • The fourth stage will concern the interiors. The scientific committee will meet throughout the worksite, promotion and mediation activities are planned during the worksite. **Extension of protection as historical monuments**: The DRAC Bourgogne-Franche-Comté has instructed an extension of protection for the furniture of the chapel and its annex buildings (registration order dated 30 December 2019) and has programmed conservation measures on the recently registered objects. **The protection of the furniture** (chapel and annex buildings) has been completed: the national commission for heritage and architecture gave a favourable opinion in June 2021 on the proposals for the classification of several objects, with the adoption of a protection as a movable historic ensemble and an easement to maintain them on the premises (model, autograph drawings, furniture in the pilgrims' shelter and the caretaker's house, furniture and functional lighting in the chapel). During the course of the work, the electrical network in the Chapel showed its weaknesses. It must be repaired and will cause unforeseen expenses for the association. The consequences for the restoration campaign have yet to be determined. The Association *Œuvre Notre-Dame-du-Haut (AONDH),* owner of the chapel, plans to proceed with the restoration of the pilgrims' shelter and the chaplain's house. Surroundings (buffer zone):

	- Landscape Influence Area (LAA) Study: The regional directorate for the environment, development and housing (DREAL) and the DRAC commissioned a study of the site's area of landscape influence with regard to wind power projects, which was submitted at the end of 2019. This is a document to assist the State services in their instruction and decision-making. It will be used as a basis for discussion with wind project developers to define the degree of acceptability of an installation in the Chapelle horizon. - Bourlémont Hill classified site: The DREAL is piloting a study on the possibility of classifying the Bourlémont hill, in order to reinforce the protection of the buffer zone. The study aims to verify the criteria for classification under the Environmental Code. The eventual classification would not be completed for several years. The site's management booklet would make it possible to carry out a landscape project for the wooded area, the summit crown and the immediate surroundings of the chapel. Once the first diagnostic phase of this study has been completed, a general inspection by the Ministry of Ecological Transition (CGEDD) will be requested during 2022, prior to the more precise definition of the perimeter of the classified site and the formal consultation of local stakeholders. -Management of the "summit cap": After the agricultural and forestry land development, the new land control by the *AONDH* makes it possible to envisage a coherent management project (views, plant heritage, etc.). It was pointed out that the official delimitation of the property no longer corresponds to the new plot of land. It was agreed to produce a set of specifications in 2022 to recruit a firm that will formalise a medium and long-term management document. The method will be based on that of the simple forestry management plans, integrating non-forested areas. Topics such as the maintenance of panoramas, outdoor furniture, lighting, etc. will be addressed. This will be a component of the management booklet if the site is classified. The State will provide financial support to the owner association. -Definition of a delimited perimeter of the surroundings (PDA): In addition to the listed site, the creation of a PDA is planned via the inter-municipal local urban plan (PLUi). It will concern the heart of the village and the two urban perspectives centred on the chapel. The buffer zone would be entirely covered (inclusion of isolated constructions located outside the listed site). The hamlet of Mourière (frontal view from the north side of the chapel) could be included. Réponse aux observations de la **décision 44 COM 7B.152. (4. et 7.) :** Le Centre du patrimoine mondial sera informé des futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien. Response to the comments of Decision 44 COM 7B.152. (4. and 7.): The World Heritage Centre will be informed of future projects with a potential impact on the outstanding universal value of the property.



Cité Frugès (1924)
Pessac
France

Cité Frugès (1924)
Pessac
France

L'état de conservation du bien est globalement satisfaisant.

The state of conservation of the property is generally satisfactory.

Avancées majeures :

Les changements de propriétaire de plusieurs maisons ont permis le lancement de projets de restauration ambitieux à l'horizon 2021-2022, la protection au titre des monuments historiques en mars 2019 des 29 maisons non protégées doit conduire à des démarches de restauration plus homogènes sur l'ensemble de la cité.

Extension de protection au titre des monuments historiques :
Proposition à l'inscription au titre des monuments historiques de l'ensemble des maisons des Quartiers Modernes Frugès (QMF), cette demande de protection a abouti en mars 2019.
Finalisation de la campagne d'inventaire (DRAC et Région Nouvelle Aquitaine), liée à la demande d'extension de protection.

Projet de restauration complète de trois maisons appartenant à des propriétaires différents, dans une démarche de restauration des dispositions d'origines, voire de restitution pour certains éléments. Lancement des travaux sur deux de ces maisons en 2020. Travaux ralentis en raison de la crise sanitaire. Prototype de menuiserie à l'étude sur ces deux maisons pour répondre à la fois à la volonté de conserver le dessin des menuiseries d'origine et les attentes de confort des propriétaires.

Corpus d'études dans le cadre d'une convention quadriennale et quadripartite Ville de Pessac/ Métropole /Région Nouvelle Aquitaine/ DRAC Nouvelle Aquitaine, visant la réalisation d'un certain nombre d'études lancées ou sont en cours de lancement en 2019 :
-Étude de diagnostic architectural, urbain et paysager (Ville de Pessac) ;
-Étude polychromie confiée au CICRP (DRAC) ;
-Étude socio-anthropologique sur les usages et besoins des habitants « Habiter Frugès » (Ville de Pessac) ;
-Étude signalétique (Ville de Pessac) ;
-Étude diagnostic des réseaux (Bordeaux Métropole) ;
-Étude diagnostic paysager (Bordeaux Métropole).

Major progress:

The change of ownership of several houses has enabled the launch of ambitious restoration projects by 2021-2022, and the protection of the 29 unprotected houses as historical monuments in March 2019 should lead to more homogeneous restoration approaches throughout the city.

	Extension of protection as historical monuments: Proposal for the registration as historical monuments of the group of houses in the Modern Frugès Quarters (QMF), this application for protection was successful in March 2019. Finalisation of the inventory campaign (DRAC and Region Nouvelle Aquitaine), linked to the request for extension of protection. **Project for the complete restoration** of three houses belonging to different owners, with a view to restoring the original layout and even restoring certain elements. Work on two of these houses will start in 2020. Work slowed down due to the sanitary crisis. Prototype joinery being studied on these two houses to meet both the desire to preserve the design of the original joinery and the owners' expectations of comfort. A corpus of studies within the framework of a four-year, four-party agreement between the City of Pessac, the Metropolis, the New Aquitaine Region and the New Aquitaine DRAC, aimed at carrying out a certain number of studies that have been launched or are being launched in 2019: *-Architectural, urban and landscape diagnostic study (City of Pessac);* *-Polychromy study entrusted to the CICRP (DRAC);* *-Socio-anthropological study on the uses and needs of the inhabitants "Living in Frugès" (City of Pessac);* *-Signage study (City of Pessac);* *-Diagnostic study of the utility networks (Bordeaux Metropolis);* *-Landscape diagnostic study (Bordeaux Metropolis).* Réponse aux observations de la **décision 44 COM 7B.152. (4. et 7.) :** Le Centre du patrimoine mondial sera informé des futurs projets avec un impact potentiel la valeur universelle exceptionnelle du bien. Response to the comments of Decision 44 COM 7B.152. (4. and 7.): The World Heritage Centre will be informed of future projects with a potential impact on the outstanding universal value of the property.

Complexe du Capitole (1952)
Chandigarh
Inde

The Complexe du Capitole (1952)
Chandigarh
India

L'état de conservation du bien est globalement satisfaisant.

The state of conservation of the property is generally satisfactory.

Avancées majeures :

De 2021 à 2022, l'administration a pris l'initiative de nommer des consultants en conservation spécialisés dans la réalisation d'évaluations d'impact sur le patrimoine (EIP). À l'heure actuelle, les consultants sont sur le point de finaliser les rapports d'EIP indépendants qui seront suivis par la préparation de rapports d'EIP consolidés.

Depuis 2019, les travaux de restauration du complexe du Capitole sont entrepris par phases :

- PHASE I :

Sur la base de la recommandation du *CBRI Roorkee*, les travaux de restauration de la façade en béton apparent des bâtiments et des monuments ont été entrepris. Cette phase a été achevée en 2019. Le nettoyage de la façade a été achevé et le retrait des unités d'AC (air conditionné) et des éléments étrangers de la façade est en cours.

- PHASE II :

Les travaux de restauration interne des bâtiments, notamment les revêtements de sol, l'éclairage, le système de chauffage, de ventilation et de climatisation, la lutte contre l'incendie, la préservation des tapisseries et du mobilier, ont été lancés. Cette phase devrait être achevée d'ici décembre 2024. Les travaux achevés à ce jour sont les suivants :

1. Nettoyage des surfaces en béton restantes, comme les ponts de liaison et les planchers.
2. Restauration des tapisseries du bâtiment de l'Assemblée conçu par Le Corbusier. Celles-ci ont été installées à leur emplacement d'origine.

- PHASE III :

La phase III concerne les travaux liés à la sécurité et à l'aménagement paysager du complexe du Capitole. Le département de l'urbanisme a engagé un consultant paysagiste pour ces travaux, dont la planification est en cours d'approbation. Cette phase devrait être achevée d'ici décembre 2024.

En 2022, dans le cadre de *l'Azadi ka Amrit Mahotsav* (célébration de la 75e année de l'indépendance de l'Inde), le collège d'architecture de Chandigarh, en collaboration avec le département du tourisme, a organisé les activités suivantes :

1. Visites guidées du complexe du Capitole et du centre Le Corbusier.
2. Organisation d'une exposition de maquettes de 10 bâtiments emblématiques de Chandigarh, créées par les étudiants du Collège d'architecture de Chandigarh.
3. Organisation d'un atelier sur la conservation des tapisseries et des tapis du patrimoine. L'atelier a été mené par des artisans impliqués dans la conservation des tapisseries conçues par Le Corbusier qui ornent les salles d'audience de la Haute Cour et les espaces du bâtiment de l'Assemblée.

Major progress:

From 2021 to 2022, the administration took initiative to appoint conservation consultants who specialize in conducting Heritage Impact Assessments (HIA). At present, the consultants are about to conclude the independent HIA reports which will be followed by cumulative HIA report preparation.

Since 2019, the restoration work of the Capitol complex is being undertaken in phases :

- PHASE I :

Based on recommendation of CBRI Roorkee, the restoration work of exposed concrete façade of the buildings and monuments has been undertaken. This phase has been completed in 2019. The façade cleaning has been completed and the removal of AC units and elements from the façade is ongoing.

- PHASE II :

The internal restoration works of buildings including flooring, lighting, HVAC, fire-fighting, preservation of tapestries and furniture has been initiated. This phase is likely to be completed by December 2024. The work completed so far is:

1. Cleaning of the remaining concrete surfaces like the connecting bridges and flooring;
2. Restoration of the tapestries of the Assembly building designed by Le Corbusier. The same have been installed in their original locations.

- PHASE III :

The phase III would involve works related to security and landscaping of the Capitol Complex. The Department of Urban Planning has hired landscape consultant for the work and the planning of the same is under approval. This phase is likely to be completed by December 2024.

In 2022, as a part of the *Azadi ka Amrit Mahotsav* (celebration of the 75 th year of India's Independence), Chandigarh College of Architecture in collaboration with the Tourism Department, conducted the following activities:

1. Conducted guided tours of Capitol Complex and Le Corbusier Center;
2. Organized an exhibition of models of 10 Iconic Building of Chandigarh, created by the students of Chandigarh College of Architecture;
3. Organized a workshop on Conservation of Heritage Tapestries and Carpets. The workshop was conducted by craftsmen involved in the conservation of the tapestries designed by Le Corbusier that adorn the High Court courtrooms and spaces in the Assembly building.

	Réponse aux remarques de la **décision 44 COM 7B.152** : 4. *Note que certains États parties utilisent désormais les évaluations d'impact sur le patrimoine (EIP) pour analyser l'impact potentiel des projets d'aménagement sur la valeur universelle exceptionnelle (VUE) du bien et encourage les États parties à consolider l'approche d'évaluation d'impact pour tous les sites constitutifs en introduisant des procédures d'EIP, conformément au Guide pour les EIP appliquées aux biens du patrimoine mondial culturel de l'ICOMOS (2011), afin d'évaluer les impacts potentiellement négatifs sur la VUE de la série dans son ensemble :* Comme indiqué dans le rapport sur l'état de conservation 2020, trois projets majeurs sont en place, dont deux sont proposés dans le périmètre de l'élément constitutif du bien et une dans la zone tampon, à proximité immédiate. Ces projets sont : 1. Structures auxiliaires de chauffage, de ventilation et de climatisation (CVC) ; 2. Développement général de la Haute Cour du Pendjab et de l'Haryana et 3. Le parking souterrain à plusieurs niveaux. Les rapports d'EIP pour les projets proposés dans la zone protégée (le parking souterrain à plusieurs niveaux et les structures auxiliaires de CVC) sont complets et joints, conformément aux directives de l'ICOMOS. Le rapport d'EIP pour le développement général de la Haute Cour du Pendjab et de l'Haryana est en cours. Le rapport d'avancement est joint en annexe. ***5**. Demande à l'État partie de l'Inde de soumettre toute information complémentaire dont il dispose sur la structure auxiliaire de chauffage, ventilation et climatisation, le « développement général de la Haute Cour du Punjab et de l'Haryana » et le parking souterrain sur plusieurs niveaux, d'ici le **1er février 2022** pour examen par les Organisations consultatives, et d'élaborer une EIP pour évaluer les potentiels impacts individuels et cumulés de tous les aménagements envisagés au sein des limites et de la zone tampon du complexe du Capitole, dont la structure de stationnement sur plusieurs niveaux, et de la soumettre au Centre du patrimoine mondial pour examen par les Organisations consultatives avec la documentation des projets ; et encourage également l'État partie de l'Inde à finaliser le plan de conservation pour Chandigarh :* Comme mentionné ci-dessus, les rapports d'EIP des projets de structure auxiliaire de chauffage, de ventilation et de climatisation (CVC) ainsi que de parking en sous-sol à plusieurs niveaux sont complets et joints en annexe. Le rapport d'avancement détaillant les impacts potentiels du projet proposé et décrivant la prévision des impacts pour le développement général de la Haute Cour du Pendjab et de l'Haryana est également joint. Conformément au plan de conservation présenté dans le rapport sur l'état de conservation de 2017, la restauration du paysage d'origine est en cours d'examen par le consultant en paysage nommé par l'administration de Chandigarh. Conformément au plan de conservation soumis dans le rapport sur l'état de conservation de 2017, le plan de surveillance et de sécurité global de l'ensemble du complexe du Capitole est en cours d'examen avec les parties prenantes représentant la Haute Cour, l'Assemblée et le Secrétariat ainsi que les départements concernés de l'administration de Chandigarh.

	7. Demande par ailleurs aux États parties d'informer le Centre du patrimoine mondial de tout projet ou activité en cours ou prévu au sein et dans les environs du bien, conformément au paragraphe 172 des Orientations, et d'en soumettre la documentation associée pour examen par les Organisations consultatives avant de prendre une quelconque décision sur laquelle il serait difficile de revenir : Aucun autre projet n'est prévu pour le moment. Si un tel projet de développement est prévu à l'avenir, il sera signalé au Centre du patrimoine mondial comme il convient, conformément au paragraphe 172 des *Orientations*. Response to the remarks in **Decision 44 COM 7B.152**: ***4**. Notes that a number of State Parties are currently using Heritage Impact Assessments (HIAs) to analyse possible impacts of development projects on the Outstanding Universal Value (OUV) of the property, and encourages States Parties to strengthen the impact assessment approach across all component sites by introducing HIA procedures, in line with the 2011 ICOMOS Guidance on HIAs for Cultural World Heritage Properties, in order to assess any potentially adverse impact on the OUV of each component site and on the OUV of the serial property as a whole:* As stated in the State of Conservation report 2020, three major proposals are in place out of which two are proposed within the protected area and one is proposed in the immediate buffer zone. These projects are: 1. HVAC ancillary structures; 2. Holistic Development of the Punjab and Haryana High Court and 3. The Multilevel Basement Parking. The HIA reports for the projects proposed in the protected area (The Multilevel Basement Parking and HVAC ancillary structures) are complete and attached, in conformity with ICOMOS guidance. The HIA report for the Holistic Development of the Punjab and Haryana High Court is in progress. The progress report is attached for the same. ***5**. Requests the State Party of India to submit any additional available information on the Heating, Ventilation and Air-Conditioning (HVAC) Ancillary Structure, the "Holistic development of the Punjab and Haryana High Court" and the multi-level basement parking projects, by 1 February 2022 for review by the Advisory Bodies, and to develop an HIA to assess the potential individual and cumulative impacts of all planned developments within the boundaries and buffer zone of the Capitol Complex, including the multi-level parking structure, and to submit it to the World Heritage Centre for review by the Advisory Bodies along with the project documentation; and also encourages the State Party of India to finalize the Conservation Plan for Chandigarh:* As mentioned above, the HIA reports of the Heating, Ventilation and Air-Conditioning (HVAC) Ancillary Structure and the Multilevel Basement Parking projects are complete and attached. The Progress Report detailing the potential impacts of the proposed project and outlining the prediction of the impacts for Holistic Development of the Punjab and Haryana High Court is attached.

	In pursuance of the Conservation Plan submitted in State of Conservation Report 2017, the restoration of the original landscape is under active consideration by the landscape consultant appointed by the Chandigarh Administration. In pursuance of the Conservation Plan submitted in State of Conservation Report 2017, the comprehensive surveillance and security plan of entire Capitol Complex is under active consideration with the stakeholders representing the High Court, Assembly and Secretariat along with the concerned Departments of Chandigarh Administration. ***7**. Further requests the States Parties to inform the World Heritage Centre of ongoing or planned projects or activities within and surrounding the property, in accordance with Paragraph 172 of the Operational Guidelines, and to submit associated documentation for review by the Advisory Bodies before making any decision that would be difficult to reverse:* No other project is planned at present. If such a development project is planned in the future, it will be reported to the World Heritage Center as appropriate, in accordance with Paragraph 172 of the Operational Guidelines.

Musée National des Beaux-Arts de l'Occident (1955)
Taito-Ku
Tokyo
Japon

National Museum of Western Art (1955)
Taito-ku
Tokyo
Japan

L'état de conservation du Musée National des Beaux-Arts de l'Occident est très satisfaisant.

The state of conservation of the National Museum of Western Art is very satisfactory.

Avancées majeures :
De 2021 à 2022, un projet a été entrepris pour rénover le parvis et restaurer l'intention originale exprimée par Le Corbusier. Lors de la mise en œuvre du projet, une EIP (évaluation d'impact sur le patrimoine) a été réalisée au préalable conformément aux directives de l'ICOMOS et un rapport a été soumis au Centre du patrimoine mondial de l'UNESCO.

À partir du 17 juillet 2021, date du cinquième anniversaire de son inscription sur la liste du patrimoine mondial, au total, huit messages ont été publiés sur les réseaux sociaux sur le thème du patrimoine mondial.

Une conférence en ligne intitulée *Le Corbusier et le Musée National des Beaux-Arts de l'Occident* a été diffusée sur la chaîne YouTube officielle du Musée National des Beaux-Arts de l'Occident. Elle présente l'architecture du Musée National des Beaux-Arts de l'Occident sous différents angles, notamment le concept de Le Corbusier, les changements dus aux ajouts et aux rénovations, l'inscription au patrimoine mondial et la rénovation du parvis.

Major progress:
From 2021 to 2022, a project was undertaken to renovate the forecourt and restore Le Corbusier's original expressive intent. In implementing the project, an HIA (heritage impact assessment) was conducted in conformity with ICOMOS guidance in advance and a report was submitted to the UNESCO World Heritage Center.

Starting on July 17, 2021, the fifth anniversary of its inscription on the World Heritage List, a total of eight social media posts were made on the theme of World Heritage.

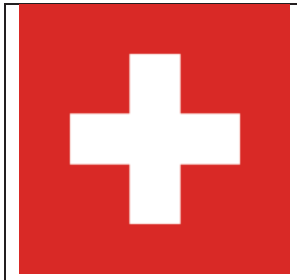
An online lecture titled "Le Corbusier and the National Museum of Western Art" was posted on the official YouTube channel of the National Museum of Western Art. It introduced the architecture of the National Museum of Western Art from various perspectives, including Le Corbusier's concept, changes due to additions and renovations, inscription as a World Heritage site, and the renovation of the forecourt.

Réponse aux observations de la **décision 44 COM 7B.152. :**

- *4. Note que certains États parties utilisent désormais les évaluations d'impact sur le patrimoine (EIP) pour analyser l'impact potentiel des projets d'aménagement sur la valeur universelle exceptionnelle (VUE) du bien et encourage les États parties à consolider l'approche d'évaluation d'impact pour tous les sites constitutifs en introduisant des procédures d'EIP, conformément au Guide pour les EIP appliquées aux biens du patrimoine mondial culturel de l'ICOMOS (2011), afin d'évaluer les impacts potentiellement négatifs sur la VUE de la série dans son ensemble :*

	Une EIP a été menée de manière appropriée pour les projets de développement susceptibles d'affecter la VUE du bien. Plus précisément, comme indiqué dans le précédent rapport sur l'état de conservation soumis en 2020, lors de la mise en œuvre du projet de rénovation de l'avant-cour du Musée National des Beaux-Arts de l'Occident, l'EIP a été réalisée conformément aux directives de l'ICOMOS de 2011, et le rapport d'EIP a été soumis au Centre du patrimoine mondial de l'UNESCO en août 2020 (*). *Comme indiqué dans le rapport, le projet visait à restaurer le concept expressif original du Musée National des Beaux-Arts de l'Occident, tel que le grand espace ouvert de l'avant-cour et la vue principale du bien depuis l'extérieur. Le projet a été achevé comme prévu en mars 2022. • *7. Demande par ailleurs aux États parties d'informer le Centre du patrimoine mondial de tout projet ou activité en cours ou prévu au sein et dans les environs du bien, conformément au paragraphe 172 des* Orientations*, et d'en soumettre la documentation associée pour examen par les Organisations consultatives avant de prendre une quelconque décision sur laquelle il serait difficile de revenir :* Aucun projet de ce type n'est prévu pour le moment, mais si un tel projet de développement est prévu à l'avenir, il sera signalé au Centre du patrimoine mondial comme il convient, conformément au paragraphe 172 des Orientations. Response to the remarks in **Decision 44 COM 7B.152.:** • *4. Notes that a number of States Parties are currently using Heritage Impact Assessments (HIAs) to analyse possible impacts of development projects on the Outstanding Universal Value (OUV) of the property, and encourages States Parties to strengthen the impact assessment approach across all component sites by introducing HIA procedures, in line with the 2011 ICOMOS Guidance on HIAs for Cultural World Heritage Properties, in order to assess any potentially adverse impact on the OUV of each component site and on the OUV of the serial property as a whole;* An HIA has been conducted appropriately for development projects that may affect the OUV of the property. Specifically, as reported in the previous state of conservation report submitted in 2020, in implementing the project to renovate the forecourt of the National Museum of Western Art, the HIA was conducted in accordance with the 2011 ICOMOS Guidance, and the HIA report was submitted to UNESCO World Heritage Center in August 2020 (*). *As stated in the report, the project was intended to restore the original expressive concept of the National Museum of Western Art, such as the large open space in the forecourt and the primary view of the property from the outside. The project was completed on schedule in March 2022.

	• *7. Further requests the States Parties to inform the World Heritage Centre of ongoing or planned projects or activities within and surrounding the property, in accordance with Paragraph 172 of the Operational Guidelines, and to submit associated documentation for review by the Advisory Bodies before making any decision that would be difficult to reverse:* No such project is planned at this time, but if such a development project is planned in the future, it will be reported to the World Heritage Center as appropriate, in accordance with Paragraph 172 of the Operational Guidelines.



Immeuble Clarté (1931)
Genève
Suisse

Clarté building (1931)
Geneva
Switzerland

L'état de conservation de l'Immeuble Clarté est jugé satisfaisant à très satisfaisant, grâce notamment au suivi de l'objet et aux échanges réguliers entre les autorités communales, cantonales et fédérales.

The state of conservation of the the Clarté building is judged to be satisfactory to very satisfactory, thanks in particular to the monitoring of the object and the regular exchanges between the municipal, cantonal and federal authorities.

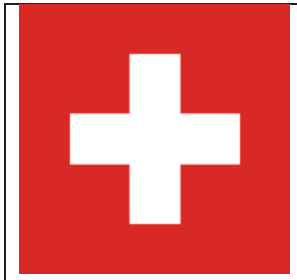
Avancées majeures :
L'immeuble est classé Monument Historique au niveau cantonal et placé sous protection fédérale, aucune intervention ne peut y être conduite sans l'autorisation spéciale du canton et de la Confédération. Depuis le rapport 2020, l'Immeuble Clarté n'a fait l'objet d'aucune modification ou intervention susceptible d'impacter le bien dans son ensemble ou les attributs soutenant la Valeur universelle exceptionnelle (VUE). De même, aucun projet dans la zone tampon susceptible de porter atteinte au bien n'est à signaler.

Les autorités cantonales travaillent actuellement au renforcement de la protection de la zone tampon du bien par la création d'un plan de site. Instrument contraignant, fondé sur les art. 38 et suivants de la loi sur la protection des monument de la nature et des sites (LPMNS), un tel plan de site détermine notamment les mesures propres à assurer la sauvegarde ou l'amélioration des lieux, telles que : maintien de bâtiments existants, alignement aux abords de lisières de bois et forêts ou de cours d'eau; angles de vue, arborisation; les conditions relatives aux constructions, installations et exploitations de toute nature (implantation, gabarit, volume, aspect, destination); ainsi que les cheminements ouverts au public ainsi que les voies d'accès à un site ou à un point de vue.

Avec le soutien financier de la Confédération, la Fondation Clarté et l'État de Genève ainsi que la ville de Genève sont devenus propriétaires respectivement d'un ensemble de locaux au rez-de-chaussée de l'immeuble (ancien restaurant Darshana, loge du concierge, ancien atelier) ainsi que d'un duplex aux 4e et 5e étages de l'immeuble. Il est à ce jour prévu que le rez-de-chaussée accueille un espace d'exposition et de documentation sur Le Corbusier, l'architecture, le patrimoine genevois et la création contemporaine. Des réflexions sont également en cours pour ouvrir le duplex au public. Ceci contribuera assurément à faire connaître l'Immeuble Clarté ainsi que l'œuvre de Le Corbusier au grand public, renforçant ainsi la visibilité du monument et de la série inscrite sur la liste du patrimoine mondial.

Major progress:
The building is classified as a historic monument at the cantonal level and placed under federal protection, and no intervention may be carried out without special authorisation from the canton and the Confederation. Since the 2020 report, the **Clarté building** has not been the subject of any modification or intervention likely to impact the property as a whole or the attributes supporting the Outstanding Universal Value (OUV). Similarly, there are no projects in the buffer zone that could affect the property.

	The cantonal authorities are currently working on strengthening the protection of the buffer zone of the property through the creation of a site plan. This is a binding instrument, based on Art. 38 et seq. of the Law on the Protection of Monuments, Nature and Sites (LPMNS), such a site plan determines, among other things, the measures to be taken to safeguard or improve the site, such as maintenance of existing buildings, alignment at the edges of woods and forests or watercourses; view angles, tree planting; conditions relating to constructions, installations and operations of all kinds (location, size, volume, appearance, purpose); as well as paths open to the public and access routes to a site or viewpoint. With the financial support of the Confederation, the Clarté Foundation, the State of Geneva and the City of Geneva became the owners of a set of premises on the ground floor of the building (former *Darshana* restaurant, caretaker's lodge, former workshop) as well as a duplex on the 4th and 5th floors of the building. It is currently planned that the ground floor will house an exhibition and documentation space on Le Corbusier, architecture, Geneva's heritage and contemporary creation. Consideration is also being given to opening the duplex to the public. This will undoubtedly contribute to making the Immeuble Clarté and Le Corbusier's work known to the general public, thus reinforcing the visibility of the monument and of the series inscribed on the World Heritage List. Réponse aux observations de la **décision 44 COM 7B.152. :** La valeur universelle exceptionnelle (VUE) du bien, respectivement les attributs physiques et immatériels, sont pris en considération lors de l'évaluation d'éventuels impacts sur le bien et ses éléments, selon les informations indiquées dans le rapport précédant sur l'état de conservation des États parties. Response to the remarks in **Decision 44 COM 7B.152.:** The Outstanding Universal Value (OUV) of the property, respectively the physical and intangible attributes, are taken into consideration when assessing possible impacts on the property and its components, according to the information provided in the previous State Party report.



Villa le Lac (1923) Corseaux Suisse

Villa le Lac (1923) Corseaux Switzerland

L'état de conservation de la Villa le Lac est jugé satisfaisant à très satisfaisant, grâce notamment au suivi de l'objet et aux échanges réguliers entre les autorités communales, cantonales et fédérales et la Fondation Le Corbusier, propriétaire du bien.

The state of conservation of the Villa le Lac is considered satisfactory to very satisfactory, thanks in particular to the monitoring of the object and the regular exchanges between the municipal, cantonal and federal authorities and the Fondation Le Corbusier, owner of the property.

Avancées majeures :
La villa est classée Monument Historique au niveau cantonal et placé sous protection fédérale, aucune intervention ne peut y être conduite sans l'autorisation spéciale du canton et de la Confédération. Depuis le rapport 2020, la Villa le Lac n'a fait l'objet d'aucune modification ou intervention susceptible d'impacter le bien dans son ensemble ou les attributs soutenant la Valeur universelle exceptionnelle VUE. De même, aucun projet dans la zone tampon du bien n'est à signaler.

La Villa le Lac est un lieu dédié à l'art et à l'architecture et accueille différentes expositions. Ceci contribue à faire connaître la Villa ainsi que l'œuvre de Le Corbusier au grand public, renforçant ainsi la visibilité du monument et de la série inscrite sur la liste du patrimoine mondial.

Progress:
The Villa le Lac is a place dedicated to art and architecture and hosts various exhibitions. This contributes to making the Villa and Le Corbusier's work known to the general public, thus reinforcing the visibility of the monument and of the series inscribed on the World Heritage List.

The villa is classified as a Historic Monument at the cantonal level and placed under federal protection, no intervention can be carried out without special authorisation from the canton and the Confederation. Since the 2020 report, the Villa le Lac has not been the subject of any modification or intervention likely to impact the property as a whole or the attributes supporting the Outstanding Universal Value. Similarly, there are no projects in the buffer zone of the property to report.

Réponse aux observations de la **décision 44 COM 7B.152. :**

La valeur universelle exceptionnelle (VUE) du bien, respectivement les attributs physiques et immatériels, sont pris en considération lors de l'évaluation d'éventuels impacts sur le bien et ses éléments, selon les informations indiquées dans le rapport précédant sur l'état de conservation des États parties.

Response to the remarks in Decision 44 COM 7B.152.:

The Outstanding Universal Value (OUV) of the property, respectively the physical and intangible attributes, are taken into consideration when assessing possible impacts on the property and its components, according to the information provided in the previous State Party report.

Annexe 1 au rapport sur l'état de conservation des 17 composantes en 2022
Annex 1 to the report on the conservation state of the 17 components in 2022

Allemagne, Argentine, Belgique, France, Inde, Japon, Suisse

Argentina, Germany, Belgium, France, India, Japan, Switzerland

L'Œuvre architecturale de Le Corbusier, une contribution exceptionnelle au Mouvement Moderne

The architectural work of Le Corbusier, an exceptional contribution to the Modern Movement

Rapport sur l'état de conservation des 17 composantes du bien en 2022

Report on the state of conservation of the 17 components of the property in 2022

Annexe 2 - Annex 2

Date d'inscription sur la liste du patrimoine mondial / Date of inscription on the World Heritage List : 2016

Critères / Criteria : (i)(ii)(vi)
Bien / Property : 98,4838 ha
Zone tampon / Buffer zone : 1 409,384 ha
Dossier / File : 1321rev
N46 28 6.29 E6 49 45.61

ANNEXE 2

INDE

Décision 44 COM 7B.152

L'Œuvre architecturale de Le Corbusier, une contribution exceptionnelle au Mouvement Moderne (Allemagne, Argentine, Belgique, France, Inde, Japon, Suisse) (C 1321rev)

5. Demande à l'État partie de l'Inde de soumettre toute information complémentaire dont il dispose sur la structure auxiliaire de chauffage, ventilation et climatisation, le « développement général de la Haute Cour du Punjab et de l'Haryana » et le parking souterrain sur plusieurs niveaux, d'ici le ***1er février 2022*** *pour examen par les Organisations consultatives, et d'élaborer une EIP pour évaluer les potentiels impacts individuels et cumulés de tous les aménagements envisagés au sein des limites et de la zone tampon du complexe du Capitole, dont la structure de stationnement sur plusieurs niveaux, et de la soumettre au Centre du patrimoine mondial pour examen par les Organisations consultatives avec la documentation des projets ; et encourage également l'État partie de l'Inde à finaliser le plan de conservation pour Chandigarh :*

Les rapports d'EIP des projets de structure auxiliaire de chauffage, de ventilation et de climatisation (CVC) ainsi que de parking en sous-sol à plusieurs niveaux sont établis et joints en annexe. Le rapport d'avancement détaillant les impacts potentiels du projet proposé et décrivant la prévision des impacts pour le développement général de la Haute Cour du Pendjab et de l'Haryana est également joint en annexe.

Conformément au plan de conservation présenté dans le rapport sur l'état de conservation de 2017, la restauration du paysage d'origine est en cours d'examen par le consultant en paysage nommé par l'administration de Chandigarh.

Conformément au plan de conservation soumis dans le rapport sur l'état de conservation de 2017, le plan de surveillance et de sécurité global de l'ensemble du complexe du Capitole est en cours d'examen avec les parties prenantes représentant la Haute Cour, l'Assemblée et le Secrétariat ainsi que les départements concernés de l'administration de Chandigarh.

ANNEX 2

INDIA

Decision 44 COM 7B.152

The architectural work of Le Corbusier, an outstanding contribution to the Modern Movement (Germany, Argentina, Belgium, France, India, Japan, Switzerland) (C 1321rev)

5. *Requests the State Party of India to submit any additional available information on the Heating, Ventilation and Air-Conditioning (HVAC) Ancillary Structure, the "Holistic development of the Punjab and Haryana High Court" and the multi-level basement parking projects, by 1 February 2022 for review by the Advisory Bodies, and to develop an HIA to assess the potential individual and cumulative impacts of all planned developments within the boundaries and buffer zone of the Capitol Complex, including the multi-level parking structure, and to submit it to the World Heritage Centre for review by the Advisory Bodies along with the project documentation; and also encourages the State Party of India to finalize the Conservation Plan for Chandigarh:*

The HIA reports of the Heating, Ventilation and Air-Conditioning (HVAC) Ancillary Structure and the Multilevel Basement Parking projects are complete and attached. The Progress Report detailing the potential impacts of the proposed project and outlining the prediction of the impacts for Holistic Development of the Punjab and Haryana High Court is attached.

In pursuance of the Conservation Plan submitted in State of Conservation Report 2017, the restoration of the original landscape is under active consideration by the landscape consultant appointed by the Chandigarh Administration.

In pursuance of the Conservation Plan submitted in State of Conservation Report 2017, the comprehensive surveillance and security plan of entire Capitol Complex is under active consideration with the stakeholders representing the High Court, Assembly and Secretariat along with the concerned Departments of Chandigarh Administration.

HERITAGE IMPACT ASSESSMENT

HERITAGE IMPACT ASSESSMENT (HIA) REPORT ON
HVAC (ANCILLARY STRUCTURES) PROJECT IN

CAPITOL COMPLEX (WHS), CHANDIGARH

NOVEMEBER 2022

HERITAGE IMPACT ASSESSMENT

Draft HIA Report - II

November, 2022

HERITAGE IMPACT ASSESSMENT (HIA) REPORT ON
HVAC (ANCILLARY STRUCTURES) PROJECT IN

CAPITOL COMPLEX (WHS), CHANDIGARH

Prepared for:
Engineering Department,
Union Territory, Chandigarh

In consultation with
Chandigarh College of Architecture (CCA)

Prepared by:
Bhawna Dandona (Conservation Architect)
Bhavya Ahuja (Conservation Architect)

Executive Summary

The Heritage Impact Assessment report is prepared to assess the proposed HVAC(Ancillary Structures) project in the World Heritage Site (WHS) of the Capitol Complex, Chandigarh, India. It is a stand-alone report commissioned by the Engineering department, Chandigarh Administration based on the request made by the World Heritage Committee. The assessment is carried out by the conservation architects, Bhawna Dandona and Bhavya Ahuja with the support of Chandigarh College of Architecture.

The report has been prepared to inform decisions to managing authorities keeping in mind to protect the Outstanding Universal Value (OUV) of the WHS Capitol Complex as part of the unique **transnational serial property of *The Architectural Work of Le Corbusier*.** The purpose of this assessment is to evaluate the proposed development in terms of its potential impacts on the existing resources included in the core and buffer zones of the World Heritage Site of the Capitol Complex, Chandigarh.

The methodology is based on the resource manual, Guidance and Toolkit for Impact Assessment in a World Heritage context by UNESCO, ICCROM, ICOMOS, and IUCN. The background information and baseline assessment data sets the context of the WH Site Capitol Complex to assess the foreseeing impacts of future developments. In addition, the assessment includes valuable inputs from key stakeholders.

The results of the assessment show that the proposed actions are causing moderate negative impacts which can be avoided with the recommended mitigation measures. The recommended measures to be taken into consideration **before, after and during the proposed project.**

Finally, the Heritage Impact Assessment report is assessing the impacts of HVAC (Ancillary Structures) project. It is suggested that all three proposals should be jointly considered to evaluate their collective impacts on the OUV of WHS of Capitol Complex.

Acknowledgments

The Heritage impact assessment report for the proposed project HVAC (Ancillary Structures) was made possible with the support of the Engineering department and Department of Urban Planning, Chandigarh Administration, U.T.

We would like to thank Mr. C.B. Ojha, Chief Engineer and Dr. Arman Singh, Sub Divisional Engineer, Engineering Department, Chandigarh Administration, for their support and for sharing the project details to carry out the assessment.

We thank Mr. Kapil Setia, Chief Architect, Department of Urban Planning, Chandigarh Administration, for providing us with the data and for sharing the perspectives on the current issues of the Capitol Complex site. We would like to extend our gratitude to the staff of the Department of Public Health, for providing the relevant information.

We would like to extend our special thanks to Dr. Sangeeta Bagga, Principal, Chandigarh College of Architecture (CCA) for the generous support provided throughout the assessment. We thank Assistant Prof. Saumya and Assistant Prof. Monika at CCA, for their valuable time and inputs during our meetings.

We thank Ms. Benedicte Gandini, Conservation Architect, FLC for her feedback.

We would like to extend gratitude to the Site managers and team for providing inputs on out queries and sharing technical details of the HVAC (Ancillary Structures) project.

Team

Bhawna Dandona, Conservation Architect
Bhavya Ahuja, Conservation Architect
Mrinalini Singh, Conservation Architect, MDL
Pravallika Neti, Architect, MDL

Abbreviations

CHCC Chandigarh Heritage Conservation Committee

CMP Comprehensive Mobility Plan

ESZ Eco-sensitive Zone

HIA Heritage Impact Assessment

HVAC Heating, Ventilation, and Air Conditioning

ICCROM International Centre for the Study of the Preservation and Restoration of Cultural Property

ICOMOS International Council on Monuments and Sites

IUCN International Union for Conservation of Nature

OUV Outstanding Universal Value

SOC State of Conservation

SMP Site Management Plan

WHC World Heritage Committee

WHS World Heritage Site

1. Introduction

The Capitol Complex, Chandigarh in India was inscribed in the UNESCO World Heritage List as part of the **transnational serial property** under the title of **"The Architectural Works of Le Corbusier"** which represents an outstanding contribution to the Modern Movement".

Since the inscription, site management plans, and holistic development plan have been prepared which include the proposals for new construction and infrastructural development within the Core zone of the inscribed WH property. However, the UNESCO World Heritage Committee and its advisory non-government organization for World Cultural Heritage Sites ICOMOS expressed concerns that the new projects could jeopardize the integrity of the World Heritage property. Therefore, a decision was made to carry out a Heritage Impact Assessment (HIA) to evaluate the positive and negative effects of the projects on the Outstanding Universal Value (OUV) of the World Heritage Site.

The proposals include the following new projects:

i. HVAC (Ancillary Structures)
ii. High Court Extension
iii. Multi-level Underground parking

This HIA addresses the impact of the HVAC (Ancillary Structures) project, proposed for the Secretariat building in the inscribed property of the Capitol Complex. The independent heritage impact assessment is commissioned by the Chandigarh Administration.

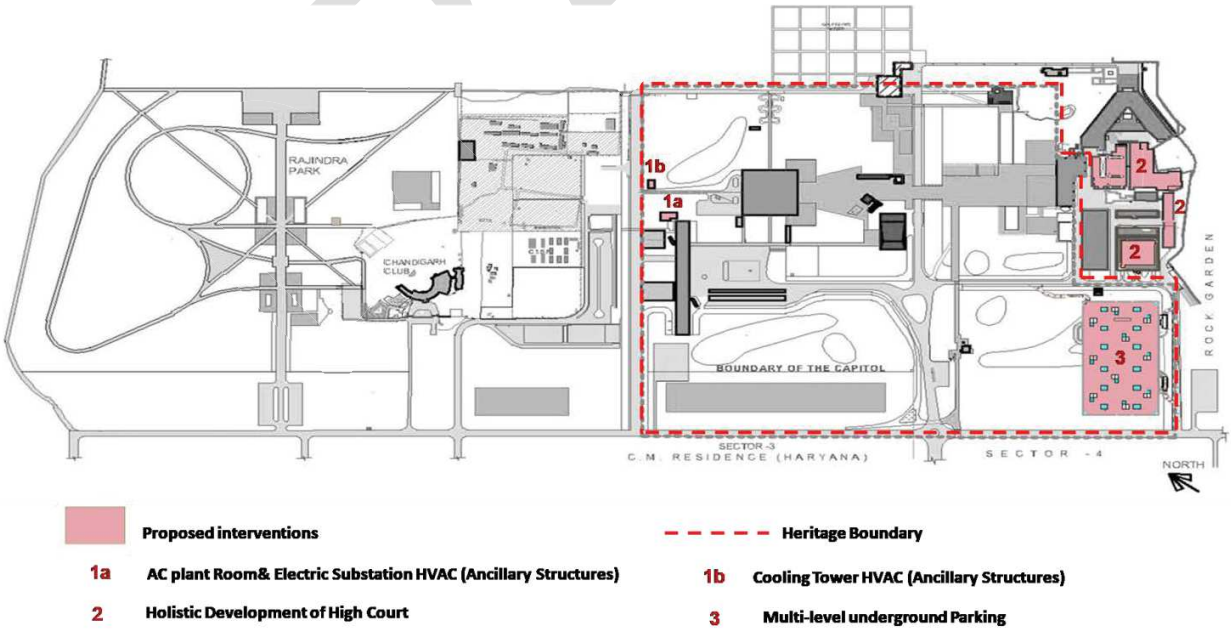


Image 1: Plan of the Capitol complex showing proposed projects © SOC, 2020 modified by HIA Team

1.1 Need for Heritage Impact Assessment (HIA)

The Heritage Impact Assessment is based on decisions adopted at the 42nd and 44th sessions of the World Heritage Committee in 2018 and 2021, on the following grounds that

1. In 2017, the State Party mentioned in SOC report that the process of formulation of the Conservation Plan has been initiated including the framing of architectural regulations to oversee future development and conservation efforts. Interventions required to deal with the projected infrastructural needs such as HVAC etc. shall be outlined by the conservation architect and controlled by these Architectural regulations by January, 2017.[1]

2. In 2020 as per the proposal by the conservation consultant, the outdoor AC units, that were placed in the balconies and causing visual clutter to the Secretariat building facade, have been removed. A central air conditioning system has been proposed for which the small ancillary structures become a necessity to be provided near the Secretariat building. These have been designed as underground units. CHCC has given approval for the execution.[2] (Attached in Annexure)

3. In 2021, at 44th extended session WHC requested "the State Party of India to submit any additional available information on the Heating, Ventilation, and Air-Conditioning (HVAC) Ancillary Structure, the "Holistic development of the Punjab and Haryana High Court" and the multi-level basement parking projects, by 1 February 2022 for review by the Advisory Bodies, and to develop an HIA to assess the potential individual and cumulative impacts of all planned developments within the boundaries and buffer zone of the Capitol Complex.

Based on the WHC decisions, the Chandigarh Administration is conducting the HIA for the proposed projects in the Capitol Complex, Chandigarh.

[1] "State of Conservation Report," 2017.
[2] "State of Conservation Report," 2020.

Since the WH inscription of the Capitol Complex Site in 2016, the new project proposals have been pondered and it has gone under consideration from various authorities. The following timeline is prepared to present the stages of management of the WHS. The important events are highlighted related to the heritage impact assessment of the proposed projects.

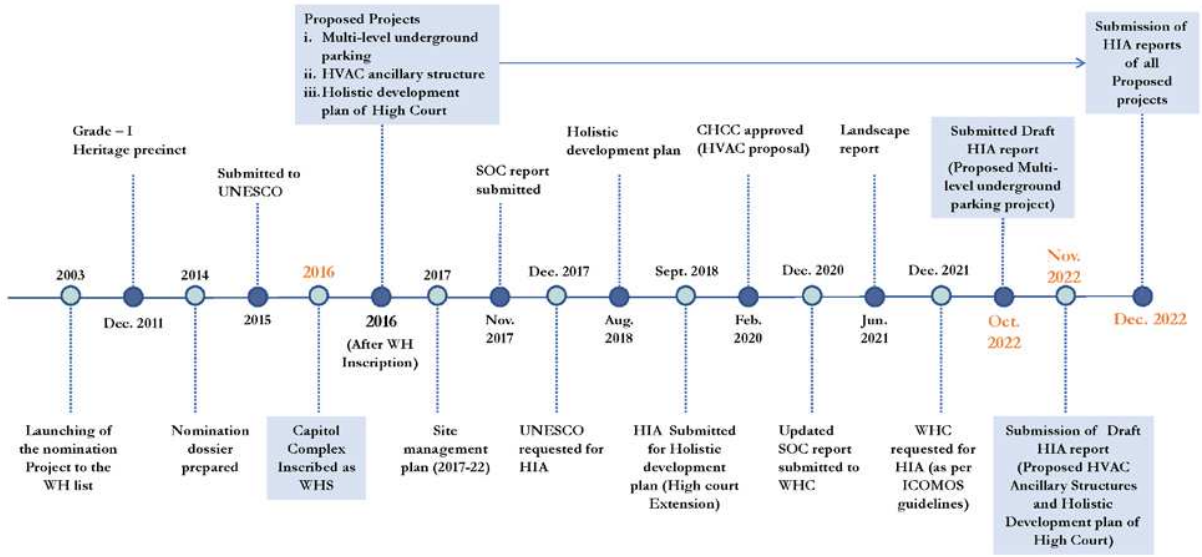


Image 2: Chronology of WHS managment © HIA Team

S.no.	Date	Events
1	2003	Launching of the nomination project to the world heritage list
2	23 Dec. 2011	Grade I Heritage precinct
3	2014	Nomination dossier prepared
4	2015	Submitted to UNESCO
5	2016	Inscribed as WHS
6	2016 (after inscription)	Project proposal for (Holistic development plan High court extension, multi-level underground parking, and HVAC ancillary structures)
7	2017	Site management plan prepared for five years (2017-2022)
8	Nov. 2017	SOC report Submitted to WHC
9	Dec. 2017	WHC requested for HIA
10	Aug 2018	Holistic development plan of High Court Extension
11	Sept. 2018	HIA for Holistic development plan of High Court Extension
12	Feb. 2020	CHCC approved the proposal of (HVAC Ancillary Structures)
13	Dec. 2020	Updated SOC Report
14	Dec. 2021	WHC requested for HIA as per ICOMOS guidelines
15	June 2021	Landscape assessment report
16	Oct. 2022	Submitted HIA report (Multi-level underground parking project)
	Nov. 2022	Submission of HIA report on HVAC (Ancillary Structures) & Holistic development of High Court Extension
17	Dec. 2022	Updated SOC to be Submitted

1.2 Objective of Heritage Impact Assessment (HIA)

The overall objective of the heritage impact assessment is to preserve and sustain the OUV of the WHS Capitol Complex through sensitive and compatible actions while continuing to develop the site with the utmost care for its future.

The broad objectives are:

- To evaluate from an unbiased perspective the effects of the proposed HVAC (Ancillary Structures) project on the OUV of the WHS of the Capitol Complex. In case of negative influences, the plan is to develop recommendations on how to reduce or rectify or avoid such influences.
- To carry out direct, meaningful and useful field based studies that will have a practical application in future planning and implementation.
- To provide measures to avoid or minimize the expected damage that may occur due to proposed HVAC system.

1.3 Methodology for Heritage Impact Assessment (HIA)

The structure and content of the HIA is built on data collection, archival research, available literature and guidelines, site management plans, and site, and building studies.

The HIA is prepared in accordance with the **Guidance and toolkit for impact assessment** developed by UNESCO and the advisory bodies to the World Heritage Committee, ICCROM, ICOMOS, and IUCN. The guidance was published in 2022. The methodology used for the impact assessment is in line with the Guidance.

The methodology adopted for the Heritage Impact Assessment:

Image 3: : Methodology Framework © HIA Team

1.4 Stakeholders

The stakeholders of the WHS Capitol Complex are identified at four levels: international, national, state, and local. The key stakeholders were involved in the assessment starting from the preliminary discussions (representatives of the Chandigarh administration, Chandigarh College of Architecture, and locals).

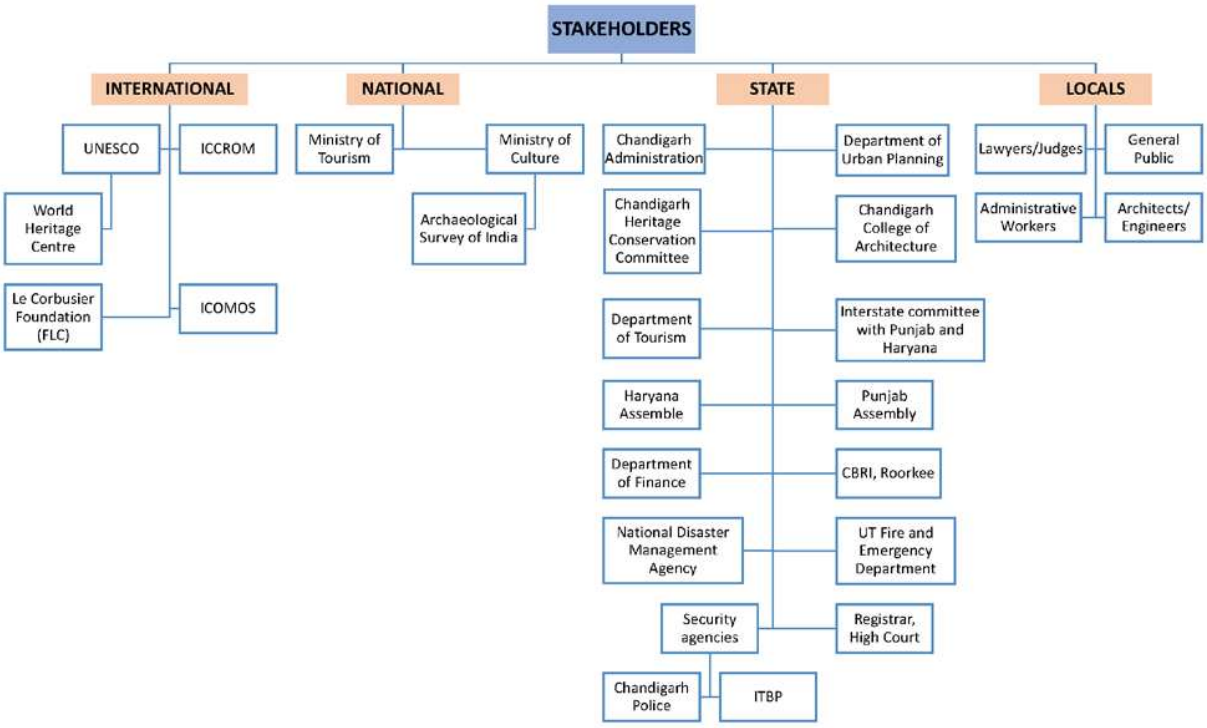


Image 4: : Stakeholders flowchart © HIA Team

The scope of HIA, its content, framework, and timeline were prepared in consultation with stakeholders to carry out the impact assessment. The Engineering department and Department of Planning of the Chandigarh Administration were requested to provide baseline data that served as a basis for this assessment. In addition, the principal of Chandigarh College of Architecture was consulted throughout the process of assessment.

This HIA process was carried out with stakeholder's consultation (technical experts and concerned engineers). During the assessment, queries were raised to understand the need and technicalities of the proposed project of HVAC (Ancillary Structures) in the Capitol Complex. The responses of stakeholder consultation is attached in the annexure.

2. Baseline Assessment

The data on the inscribed property of the Capitol Complex, its OUV, state of conservation, and protection instruments are used as a baseline for the impact assessment stages which further compares the future of the site with or without the proposed project.

This chapter will discuss the boundaries of the inscribed property and buffer zone followed by a critical analysis. The breakdown of OUV, other heritage/conservation values and attributes are included in this chapter which is further leading to the identification and evaluation of the potential impacts of the proposed action.

The following sources are referred for baseline assessment:

Table 1: Baseline Data and Sources

S.no.	Sources referred	Source of Information
1.	Nomination dossier	UNESCO
2.	State of Conservation Reports (SOC, 2018, 2020)	UNESCO
3.	Decisions adopted at WHC	UNESCO
4.	Archival drawings and images	Foundation Le Corbusier and Canadian Centre for Architecture (CCA Archives)
5.	Nomination documents on the series	Foundation Le Corbusier
6.	Site survey plans	Engineering Department and Department of Urban Planning, Chandigarh Administration, U.T.
7.	Proposed project drawings	
8.	Site Management Plan	
9.	Landscape assessment Report	
10.	Holistic development plan of High Court	
11.	HIA report on holistic development of High Court	
12.	Lidar Survey Plan of Site contours	
13.	Additional information on HVAC(Ancillary Structures)	Public Health Wing, Engineering Department, Chandigarh Administration, U.T.
14.	Urban studies	Chandigarh Master Plan_2031
15.	On Site and building studies	HIA Team
16.	Stakeholder's consultation	HIA Team

2.1 The Capitol Complex World Heritage Site

In 2016, at the 40th session of the World Heritage Committee in Turkey, the Capitol Complex at Chandigarh site was inscribed under the board umbrella of transnational serial properties. The site was included in the list of "The architectural works of Le Corbusier" chosen among the 17 sites that are spread over 7 countries and 3 continents.

The Capitol Complex in Chandigarh is a unique and outstanding example of Le Corbusier's contribution to the creation of new types of public buildings. This is one of the most monumental compositions of modern town planning, a major contribution to the Corbusian heritage resulting from a unique geopolitical and cultural context. The three buildings of the Capitol Complex are considered the most accomplished plastic ensemble where he is at the same time architect, artist, and sculptor (Nomination dossier, 2015).

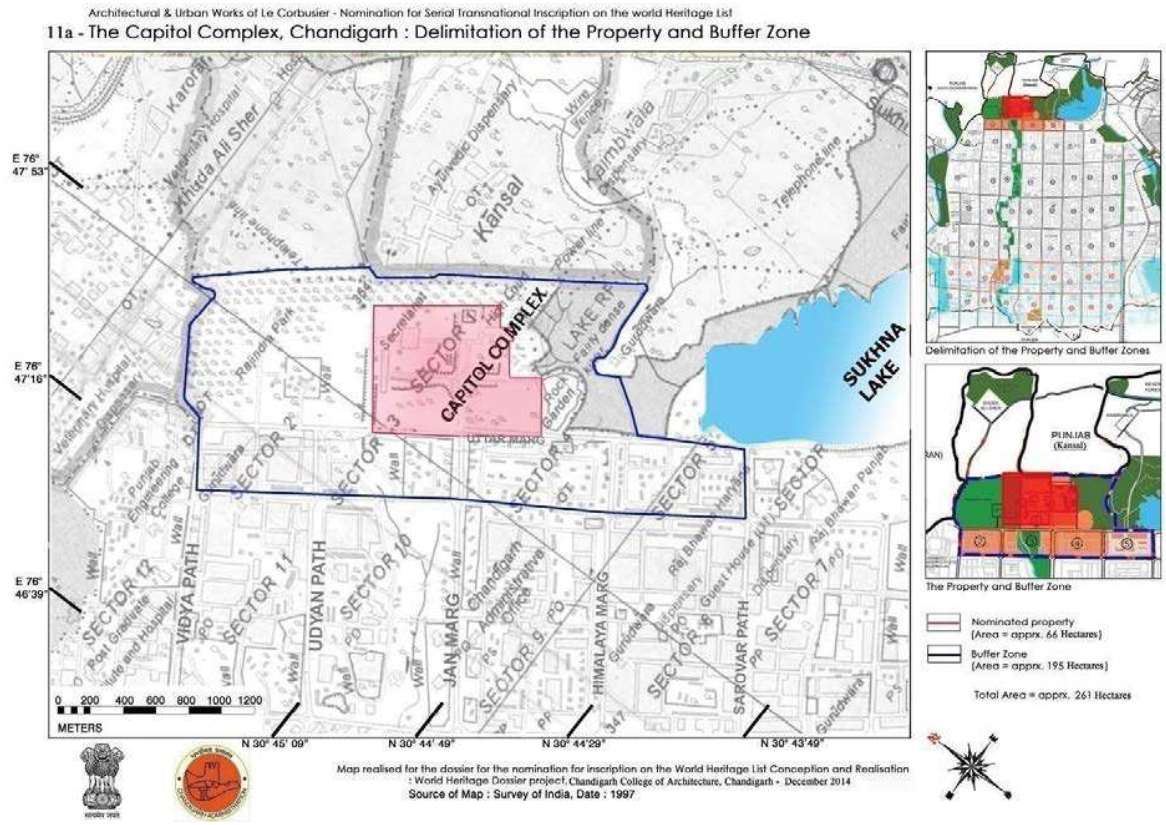


Image 5: Inscribed boundaries of Core zone and buffer zone of WHS Capitol complex, Chandigarh © UNESCO Nomination dossier, 2016

2.1.1 The WH Site

The World Heritage site, Capitol complex is located in Sector 1 at the geographic and topographic head of the city of Chandigarh against the backdrop of the Shivalik Hills towards the north (Image 6). The site is stretched across the width of the city along with Rajendra Park towards the west and Sukhna Lake on its East. The Capitol Complex is connected with the rest of the city through the ceremonial boulevard, Jan Marg (People's Avenue, V2 Capitol).

Image 6: Geographic setting of the WH site Capitol complex, Chandigarh ©http://chandigarhurbanlab.org/

2.1.2 The Core Zone of WHS

The Capitol Complex site is designed by the architect Le Corbusier consisting of a group of buildings i.e. Secretariat, High Court, and Legislative Assembly and four monuments: the Tower of Shadows, Open Hand, Martyr's Memorial, and Geometric Hill built on a monumental scale. The site is flanked by Rajendra Park on the northern edge and Sukhna Lake on the eastern. The three heritage buildings and four monuments are part of the core zone of the inscribed WH property (Image 7). The inscribed boundary of the core zone covers an area of 66 hectares (123.55 acres).

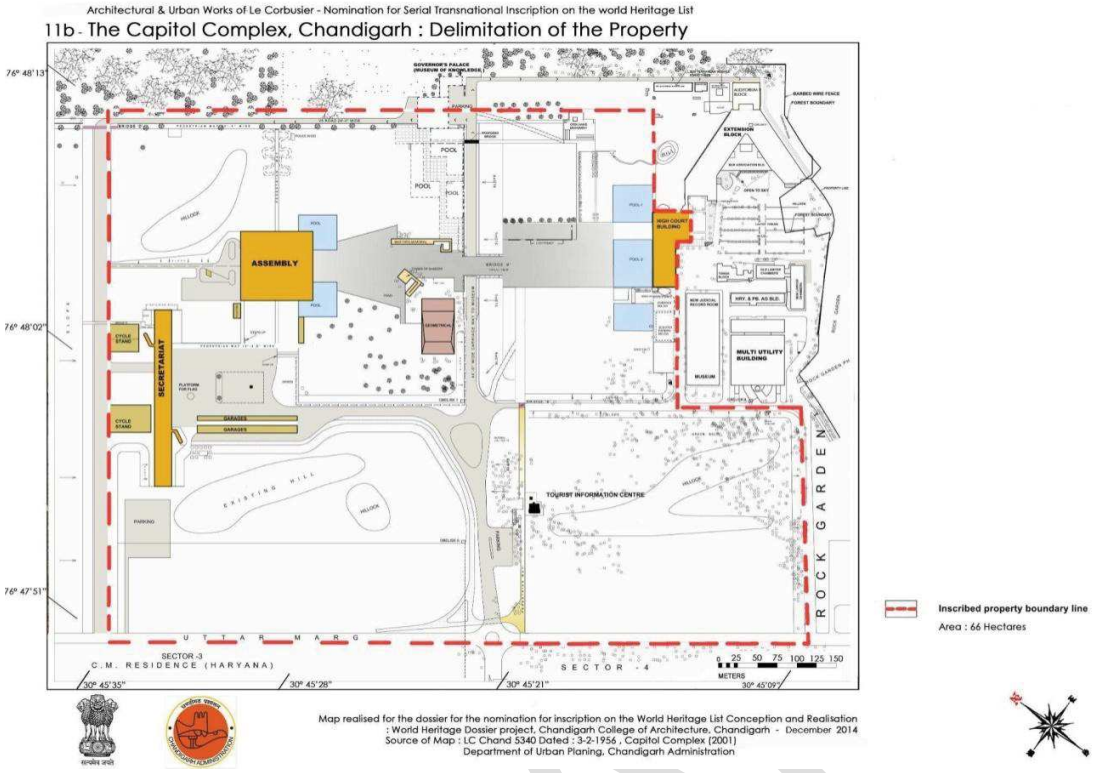


Image 7: Core Zone of the inscribed property, Capitol Complex © UNESCO Nomination Dossier

The site layout is based on an invisible geometry of three interlocking squares, their corners, and intersection points marked by 'Obelisks'. The site is planned on a cross-axis wherein rigid symmetry has been avoided in the placement of buildings and monuments to enable a visual thrust towards the hills while providing each building a suitable foreground. While the linear façade of the Secretariat marks the edge of the Complex on the left side, the Assembly and the High Court are placed on the opposite ends of the cross axis, facing each other across a 450-meter Esplanade (open plaza). The placement of the Secretariat and the High Court with the longer facades perpendicular to the hills lend an unobstructed view of the foothills.

The Capitol Complex site was designed as a great pedestrian plaza with motorized traffic confined to sunken trenches. There are artificial hillocks strategically created from the excavated ground around a landscape composition. The core zone of the inscribed WH property reflects the original planning principles.

Image 8: The building and site views of WHS © HIA Team

2.1.3 The Buffer Zone of WHS

The buffer zone of the Capitol complex constitutes Rajendra park, the rock garden, and adjacent parts of Sectors 2, 3, 4, and 5 (Image 5). The buffer zone covers an area of 195 hectares (481.85 acres) The inscribed boundary of the buffer zone covers all elements that serve to protect the authenticity and integrity of the World Heritage Site.

The northern buffer is defined by the existing mango groves, the southern edge comprises the residential Sectors 2, 3, 4, and 5 which are mostly two-storied low-rise developments of government and private properties. This part of the buffer further connects the property to the city along the ceremonial avenue - the V2 Jan Marg. The eastern buffer includes the High Court extension and the Rock Garden while Rajendra Park defines the western buffer. It ensures the protection of the visual connection of the inscribed property with the city. The road along the Rock Garden defines the protected Sukhna Lake Reserve forest area to ensure the environmental protection of the site.

The boundaries of the buffer zone have been established with a view to serve as an additional layer of protection to the inscribed property. The inscribed boundary and buffer zone constitute its OUV and the attributes derived from it. The buffer safeguards the WHS from developments that could adversely affect its attributes.

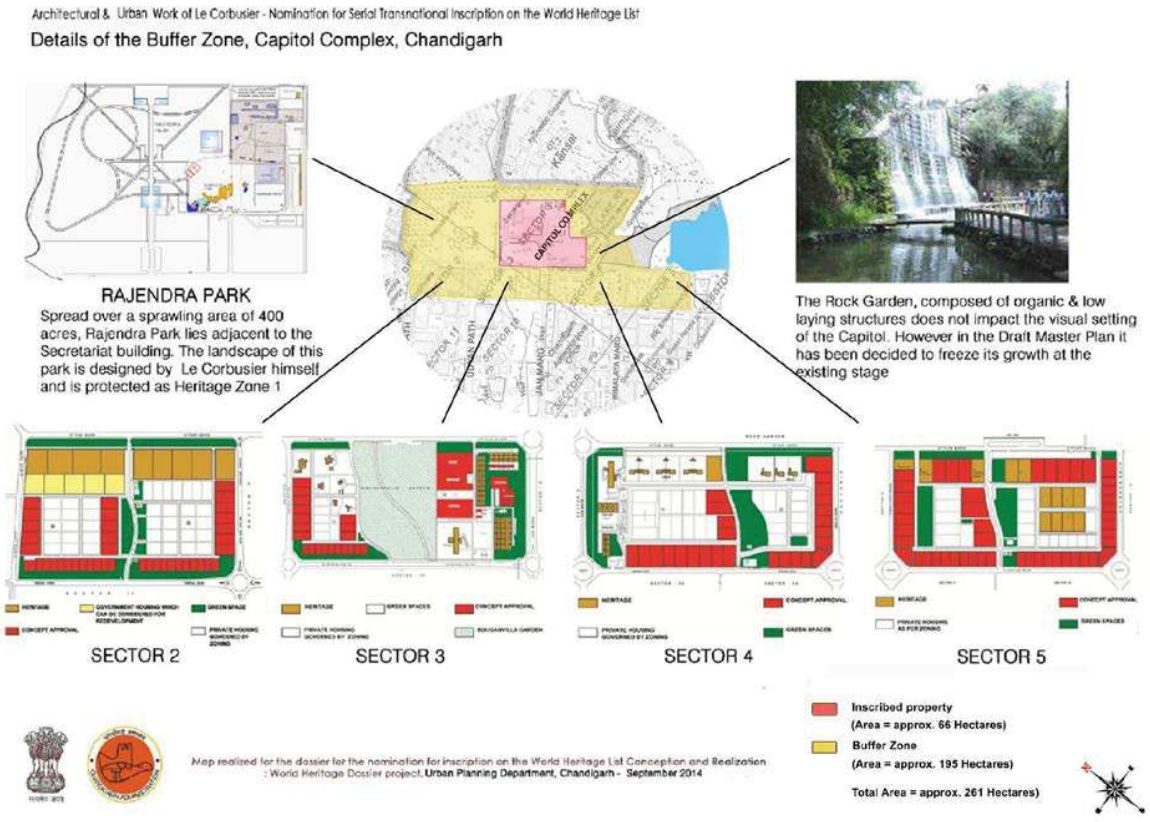


Image 9: : Inscribed property and buffer zone © UNESCO Nomination Dossier

2.1.4 Key Inferences

The inscribed boundaries were drafted in 2016 and later revised in 2018. The initial inscribed boundary from 2016 did not incorporate the south side of the Capitol Complex. This was later revised to include the southern edge of the inscribed property (Image 9).

The revision in the boundary could have been foresight and may have been undertaken to protect the open landscaped area from any future developments.

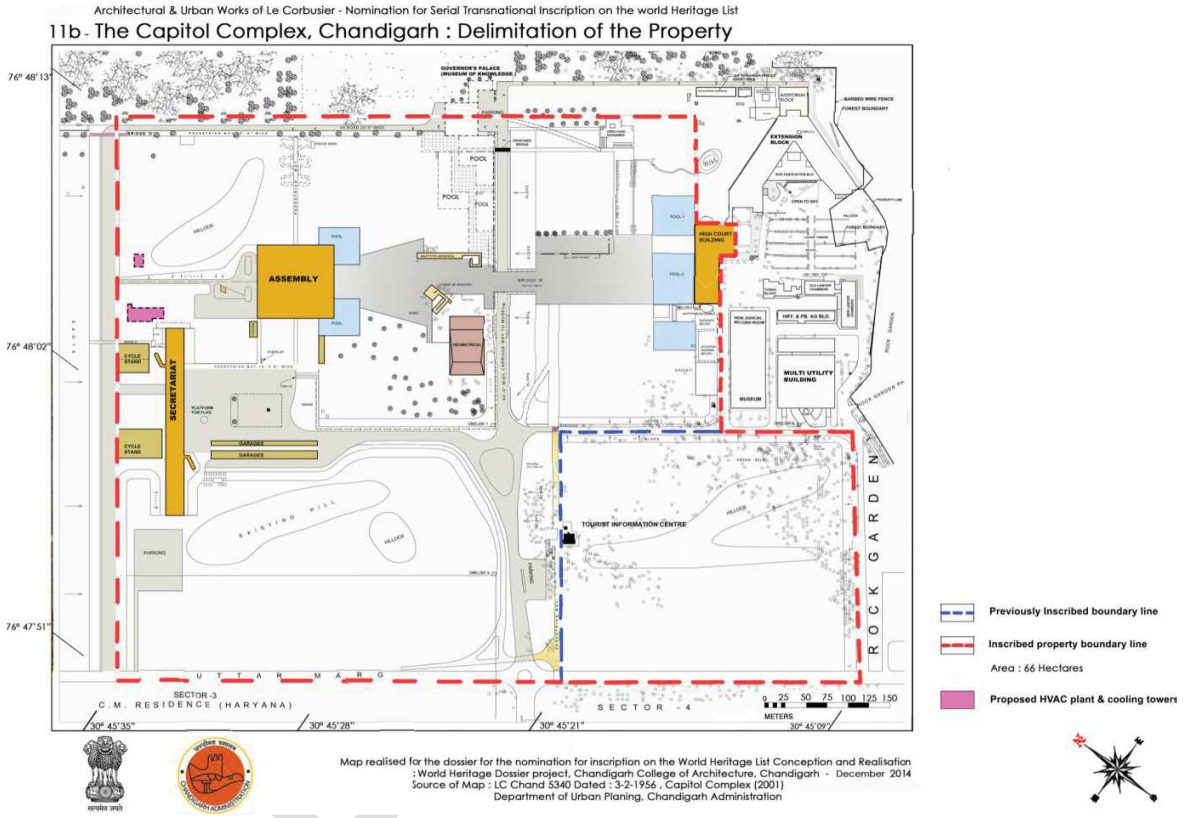


Image 10: Extent of Core zone boundary showing the location of proposed parking © UNESCO Nomination Dossier modified by HIA Team

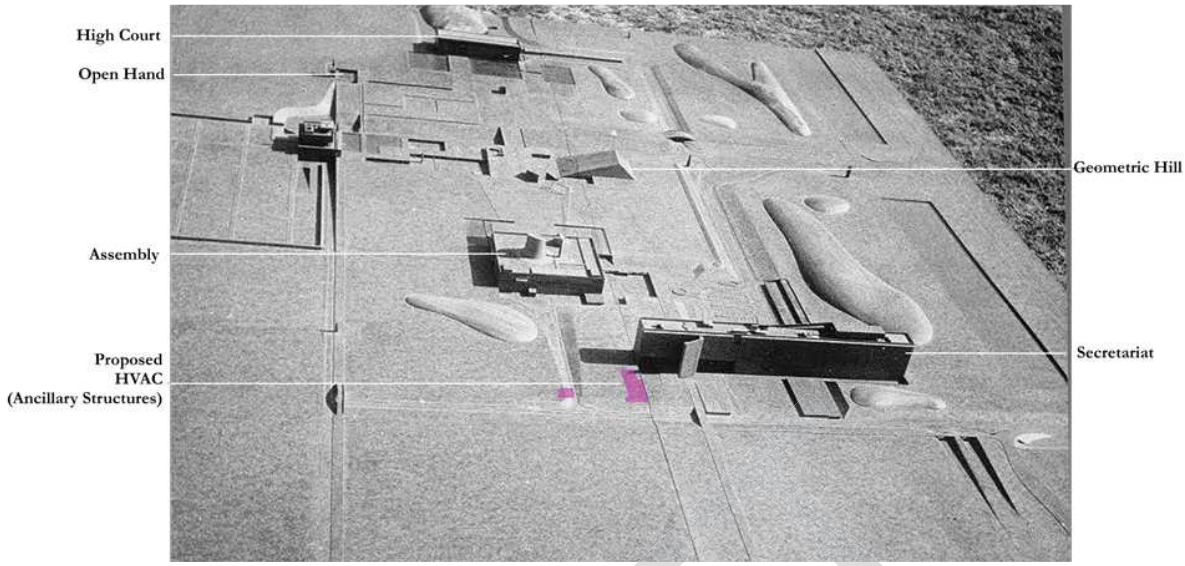


Image 11: Capitol Complex, Chandigarh © Foundation Le Corbusier

The importance of original landscape is very high for the WHS of Capitol Complex. The green open spaces carries the values that are integrated in the attributes of the site. However, these open areas are subject to the proposed developments around the heritage buildings.

2.2 Outstanding Universal Value(OUV)

OUV is a central concept of the World Heritage Convention. OUV of the WHS Capitol Complex has such exceptional significance that it is relevant beyond national boundaries and has a universal value for present and future generations. **"The Architectural Work of Le Corbusier"** is a **transnational serial property**, consisting of 17 sites spread over 7 countries, chosen together because they represent a unique outstanding universal value**.** The inscription of the Capitol Complex site does not claim to represent alone, the idea of the Modern Movement, but it possesses sufficient integrity to embody an outstanding contribution on a global scale.

The following statement and OUV criteria was approved in 2016. The highlighted text is emphasized in relation to the Capitol Complex since it plays a decisive role in the impact assessment.

"Brief synthesis"

Chosen from the work of architect Le Corbusier that survives in eleven countries on four continents, the sites in seven countries on three continents, implemented over a period of half a century, for the first time in the history of architecture attest to the internationalization of architectural practice across the entire planet.

The seventeen sites together represent an outstanding *response to some of the fundamental issues of architecture and society in the 20th century. All were innovative in the way they reflect new concepts, all had a significant influence over wide geographical areas, and together they disseminated ideas of the Modern Movement throughout the world. Despite its diversity, the Modern Movement was a major and essential socio-cultural and historical entity of the 20th century, which has to a large degree remained the basis of the architectural culture of the 21st century. From the 1910s to the 1960s, the Modern Movement, in meeting the challenges of contemporary society, aimed to instigate a unique forum of ideas at a world level, invent a new architectural language, modernize architectural techniques and meet the social and human needs of modern man. The series provides an outstanding response to all these challenges.*

Some of the component sites immediately assumed an iconic status and had world-wide influence. These include the Villa Savoye, as an icon for the Modern Movement; Unité d'habitation in Marseille as a major prototype of a new housing model based on a balance between the individual and the collective; Chapelle Notre-Dame-du-Haut for its revolutionary approach to religious architecture; the Cabanon de Le Corbusier as an archetypal minimum cell based on ergonomic and functionalist approaches; and the Maisons de la Weissenhof-Siedlung that became known worldwide, as part of the Werkbund exhibition.

Other sites acted as catalysts for spreading ideas around their own regions, such as Maison Guiette, that spurred the development of the Modern Movement in Belgium and the Netherlands; the Maison du Docteur Curutchet that exerted a fundamental influence in South America; the Musée National des Beaux-Arts de l'Occident as the prototype of the globally transposable Museum of Unlimited Growth which cemented ideas of the Modern Movement in Japan; ***and the Capitol Complex that had a considerable influence across the Indian subcontinent, where it symbolized India's accession to modernity.***

Many of the sites reflect new architectural concepts, principles, and technical features. The Petite villa au bord du Léman is an early expression of minimalist needs as is also crystallized in the Cabanon de Le Corbusier. Le Corbusier's Five Points of a New Architecture are transcribed iconically in Villa Savoye. The Immeuble locatif à la Porte Molitor is an example of the application of these points to a residential block, while they were also applied to houses, such as the Cité Frugès, and reinterpreted in the Maison du Docteur Curutchet, in the Couvent Sainte-Marie-de-la-Tourette and in the Musée National des Beaux-Arts de l'Occident. The glass-walled apartment building had its prototype in the Immeuble locatif à la Porte Molitor.

A few sites inspired major trends in the Modern Movement, Purism, Brutalism, and a move towards a sculptural form of architecture. The inaugural use of Purism can be seen in the Maisons La Roche et Jeanneret, Cité Frugès and the Maison Guiette; the Unité d'Habitation played a pioneering role in promoting the trend of Brutalism, while the Chapelle Notre-Dame-du-Haut and ***the Capitol Complex promoted sculptural forms.***

Innovation and experimentation are reflected in the independent structure of concrete beams of the Maisons de la Weissenhof-Siedlung, while pre-stressed reinforced concrete was used in the Couvent de La Tourette. ***In the Capitol Complex, concern for natural air-conditioning and energy saving led to the use of sunscreens, double-skinned roofs, and reflecting pools for the catchment of rainwater and air cooling.***

Standardisation is seen in the Unité d'Habitation de Marseille, a prototype intended for mass production, while the Petite villa au bord du Lac Léman set out the standard for a single span minimal house, and the Cabanon de Le Corbusier presented a standard, minimum unit for living. ***The modulor, a harmonic system based on human scale, was used for the exterior spaces of the Complexe du Capitole, which reflect the silhouette of a man with raised arm.***

The idea of buildings designed around the new needs of 'modern man in the machine age' is exemplified in the light new workspaces of Manufacture à Saint-Dié, while the avant-garde housing at the Cité Frugès, and the low-rent Maisons de la Weissenhof-Siedlung, demonstrate the way new approaches were not intended for a tiny fraction of society but rather for the population as a whole. By contrast, the Immeuble Clarté was intended to revolutionise middle class housing. The Athens Charter, as revised by Le Corbusier, promoted the concept of balance between the collective and the individual, and had its prototype in the Unité d'habitation, while ***the Capitol Complex, the focal point of the plan for the city of Chandigarh, is seen as the most complete contribution to its principles and to the idea of the Radiant City."***

2.2.1 OUV Criteria of the Capitol Complex

The Capitol Complex site as part of "The Architectural work of Le Corbusier" was inscribed based on the OUV Criteria (i), (ii), and (vi). These criteria provide the justification of the property on which the nomination was proposed.

The OUV criteria convey the attributes and values of the WHS. For the impact assessment, the attributes and values have been underlined and highlighted.

Criterion (i): The Architectural Work of Le Corbusier **represents a masterpiece of human creative genius,** providing an outstanding response to certain fundamental architectural and social challenges of the 20th century.

Criterion (ii): The Architectural Work of Le Corbusier exhibits an unprecedented interchange of human values, on a worldwide scale over half a century, in relation to **the birth and development of the Modern Movement**.

The Architectural Work of Le Corbusier revolutionized architecture by demonstrating, in an exceptional and pioneering manner, **the invention of a new architectural language** that made a break with the past.

The Architectural Work of Le Corbusier marks **the birth of three major trends** in modern architecture: **Purism, Brutalism and sculptural architecture**.

The global influence reached by The Architectural Work of Le Corbusier on four continents is a new phenomenon in the history of architecture and demonstrates its unprecedented impact.

Criterion (vi): The Architectural Work of Le Corbusier is directly and **materially associated with ideas of the Modern Movement**, of which the theories and works possessed outstanding universal significance in the twentieth century. The series represents a **"New Spirit" that reflects a synthesis of architecture, painting and sculpture.**

The Architectural Work of Le Corbusier materializes the ideas of Le Corbusier that were powerfully relayed by the International Congress of Modern Architecture (CIAM) from 1928.

The Architectural Work of Le Corbusier is an outstanding reflection of the attempts of the Modern Movement to invent a **new architectural language, to modernize architectural techniques,** and to respond to the social and human needs of modern man.

The contribution made by the Architectural Work of Le Corbusier is not merely the result of an exemplary achievement at a given moment, but the **outstanding sum of built and written proposals** steadfastly disseminated worldwide through half a century.

2.3 Other heritage Values

In addition to the OUV which broadly represents the universal values of the site, the Capitol Complex is of international, national, and local heritage significance.

The heritage and conservation values are identified based on the designation of the site from the international to the local level. These values contribute to the attributes including form and design, materials and substance, use and function, techniques and management systems, location and setting, and other forms of intangible heritage, spirit and feeling.

2.4 Key Attributes of WHS

Based on the OUV narrative, the following chapter summarizes those attributes that contribute to the OUV of the World Heritage property Capitol Complex, Chandigarh.

The attributes identified here are significant features that express the OUV of the World Heritage Site and reinforce its authenticity and integrity. The four levels of recognition such as transnational/global, International, national and local level is analyzed which convey several heritage and conservation values. The OUV criteria and values are unpacked to identify attributes that might get impacted by the proposed action.

Table 2: Heritage Values and Attributes

Level of recognition	Heritage/Conservation values	Sources of information	Attributes
OUV (Transnational and Global)	A unique transnational serial property on a global scale	UNESCO (2016), Nomination file 1321 rev	20th Century architectural (Global influence on architecture and urban planning)
	Represents a masterpiece of human creative genius		Strategic location at Geographic and Topographic "Head" of the city against the back-drop of Shivalik Hills
	Birth and development of the Modern Movement		Urban planning, 20th-century architecture
	The invention of a new architectural language		Concept of Modular scale and the Golden Section applied in the planning
	The birth of three major trends : Purism, Brutalism and sculptural architecture		Plastic creation of building and monuments, Sculptural forms of The geometric Hill, Open Hand, The Tower of Shadows, Martyr's Memorial
	Materially associated		Extensive use of Concrete (High Court, Secretariat, Assembly), Structural innovation
	Represents a "New Spirit" that reflects a synthesis of architecture, painting and sculpture		Landscape composition, the monuments and the plaza, placement of buildings and monuments, artificial mounds with heterogeneous plantation, and meandering roads/pathways

International	A masterpiece of monumental and sculptural architecture celebrating the independence of a nation	UNESCO, Nomination file, 2015	Sculptural form of architecture with more complex shapes (High Court, Secretariat, Assembly)
	Marked the impact of The Architectural Work of Le Corbusier throughout the world		Monumental Scale and empty spaces between buildings (Open spaces and plaza)
	Influence across the Indian subcontinent		Site placed against the foothills of the Himalayas
	The civic centre, derived from the theoretical principles of the Radiant City and the Athens Charter		Exceptional spatial urban design based on modular
National	Heritage Zone		Historic Urban Layout
	Grade-1 Heritage		Masterpiece of sculptural architecture, Spatial Planning and Vistas
Local	Architectural value	UNESCO (2016), Nomination file 1321 rev & SMP, 2012, Capitol Complex	Architectural style, Form, Design, Natural air-conditioning and energy saving, through the use of innovative bio-climate solutions: sunscreens, double-skinned roofs, the orientation and design of openings for transversal ventilation, reflecting pools for the catchment of rainwater and air cooling, terraced gardens
	Scientific value		Technology, Material innovation
	Artistic value		Aesthetic, Sculptural form
	Environmental Value		Gradient of land for natural drainage, Tree plantation, Green open spaces, Sukhna Lake and catchment area

2.5 State of Conservation

The state of conservation of the Capitol complex and its components are evaluated in this chapter. The chronology of buildings is presented since its inception to facilitate the understanding of the site's evolution.

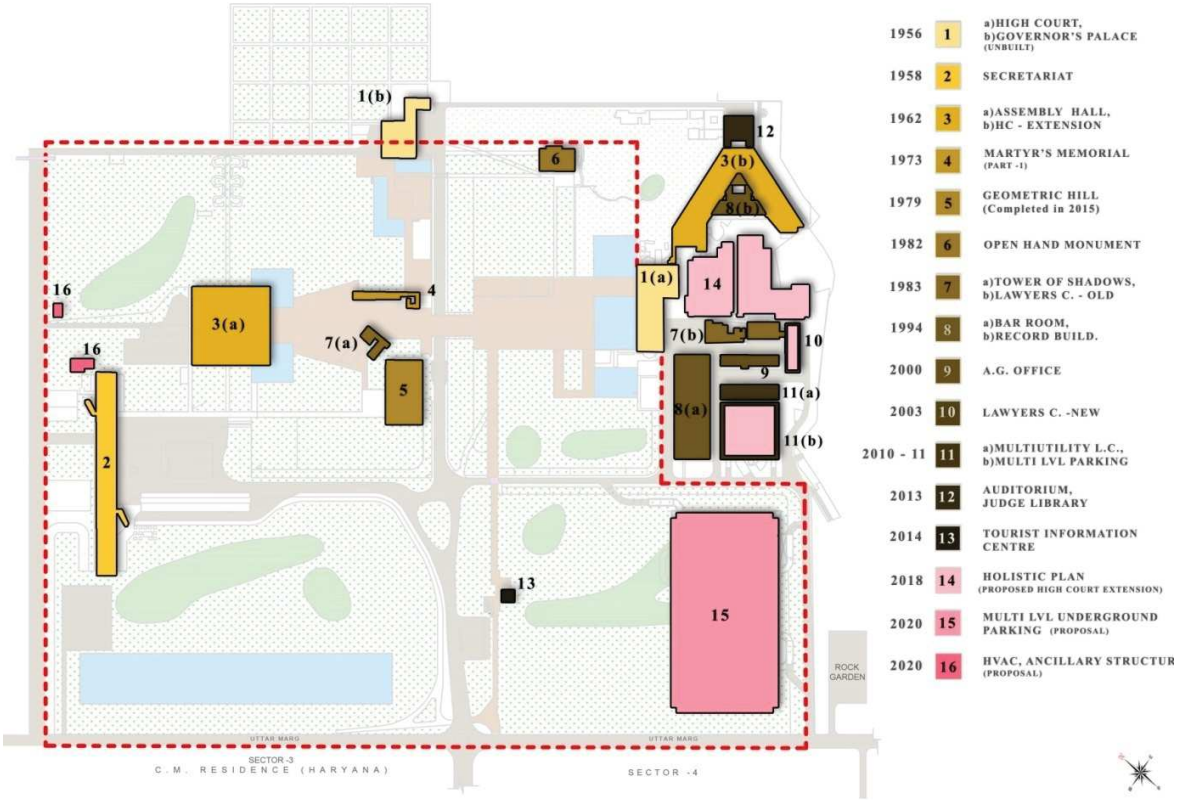


Image 12: Site evolution map of the Capitol Complex © HIA Team

The High Court was the first building to be completed in 1956 followed by the Secretariat in 1958 and the Assembly in 1962. The Open Hand monument is the first and most thoroughly developed monument among the other three monuments of Geometric hill, Martyr's memorial, and tower of shadows. The Open Hand monument was installed in 1982 and is standing tall between the Legislative Assembly and the High Court.

The unique Tower of Shadows was completed in 1983 in its sculptural form which highlights the play of shadow reflecting the architect's studies on the sun paths and ways to control harsh sun through penetration.

The Martyrs memorial and geometric hill were incomplete at the time of the World Heritage nomination process. Originally, the Martyrs memorial took shape in 1973 but it is yet to be fully realized in its entirety. The geometric hill was initiated in 1979 and it was completed in 2015.

The addition of a record room, lawyer's chambers, auditorium, tourist information center, and other utility buildings were added in the 1990s. The new project proposals are in the line since the WH inscription in 2016.

The Capitol Complex at present reflects the original planning principles. The three heritage buildings and four monuments of the Capitol Complex, in general, are in a fair state of conservation and constant upkeep has resulted in an overall well-preserved condition.

The open spaces within the core zone and buffer zone of inscribed property are facing threats from new developments.

The state of conservation of all the components of the Capitol Complex site is presented in the following table:

Table 3: State of Conservation of attributes of WHS

WH Site Capitol Complex	
Site Components	**State of Conservation**
High Court	**Maintained**
	No permanent changes to original design and layout have been made. On-going restoration work of the concrete and some interior spaces is in progress. Temporary Sheds for spillover from the courts are located on the north facade of the High Court. Additional of Split Ac units on the façade and outdoor units are place on the terrace
Secretariat	**Maintained**
	Additions have been made in the past for security checks, enclosing balconies, the addition of temporary staircases, sheds, barbed wire fencing, etc. Additions of Split Ac units on the façade.
Assembly	**Maintained**
	Ongoing restoration works in the building: exterior and interior.
Open Hand	**Maintained**
	The restoration of the metallic portion of the Open hand monument is planned to be undertaken
Geometric Hill	**Maintained**
Martyr's Memorial	**Maintained**

	Additions of sculptures near Martyr's Memorial are planned to be undertaken.
Tower of Shadows	**Maintained**
Pedestrian Plaza	**Maintained**
	Temporary barricades to address concerns for security.
Buffer Zone	**Not maintained**
	The buffer zone is not maintained facing challenges of Adhoc and unplanned construction of temporary shelters, unorganized parking, rising noise and air pollution
Views of the Shivalik Hills	**Not Maintained**
	The views of the Shivalik hills at various vantage points have been compromised. Real estate development on the north of Capitol Complex has altered the views. The setting of the property and the backdrop of the Shivalik hills is significant to its OUV.
Vehicular and Pedestrian circulation	**Not Maintained**
	Vehicular and Pedestrian circulation system has been altered. The high court road is full of on-road parking and traffic congestion is seen around the high court.

The three heritage buildings and monuments are maintained with some alterations. However, the pedestrian plaza, green open spaces in the core zone, and buffer zone are not maintained as per the original planning concept. The importance of the original planning is very high. The numerous additions, ad-hoc interventions, and extensions may blur the original site layout.

2.5.1 Authenticity and Integrity

The site meets the conditions of authenticity as recognized in the defined OUV criteria and is credibly expressed through a variety of attributes including tangible and intangible (Table 1).

Overall, the authenticity of the Capitol Complex is well maintained in the realized components i.e. the three edifices and the four monuments as well as the general layout of the core zone of the inscribed property. However, the maintenance of open areas of the property is being challenged and as a consequence, the HVAC (Ancillary Structures) are proposed in the open landscaped areas near the Secretariat building.

The proposed project needs careful attention; it may cause a state of despair to the authenticity and integrity of the site unless planned and implemented properly.

2.5.2 Factors affecting the WHS

Development pressure - The Capitol Complex being the administrative head of the two states of Haryana and Punjab for the past 60 years, the site has seen enormous pressure on its infrastructure and a manifold increase in the number of users and visitors. The site is facing challenges of adhoc and unplanned additions in the site as well as within the heritage buildings.

Environmental pressure - The inscribed property of the Capitol complex site lies in the notified eco-sensitive zone and the water catchment area for Sukhna Lake. The increasing air and noise pollution in the site may put it under an environmental threat.

Natural disasters and Risk Preparedness: The inscribed property and its buffer zone lie in the high-risk Seismic Zone 4. The proposed projects requires to be carefully planned as per the risk management guidelines.

2.6 Protection Instruments

The values and attributes of the World Heritage Site are protected by a system of legal provisions, policies and standards, and a management system of heritage governance. In this chapter, the legal instruments that protect the WHS of the Capitol complex are analyzed.

The inscribed property of the Capitol complex is under the ownership of the Chandigarh Administration hence, protected with a strong regulatory and legal framework. As Chandigarh has the status of a Union Territory, it is under the direct administrative and financial control of the Central Government of India.

The Capitol Complex site has been recognized as a heritage area of Chandigarh's Enlisted Heritage Zone approved by the Government of India and confirmed as such in the Chandigarh Master Plan 2031. In addition, the Government of India's concern to safeguard the city's heritage led to the constitution of the Expert Heritage Committee under the Chandigarh administration. Therefore, no development operation, redevelopment, or engineering, by way of additions, modifications, extensions, or repairs, cannot be carried out on the WHS without the prior written authorization of the Chandigarh Heritage Conservation Committee (CHCC).

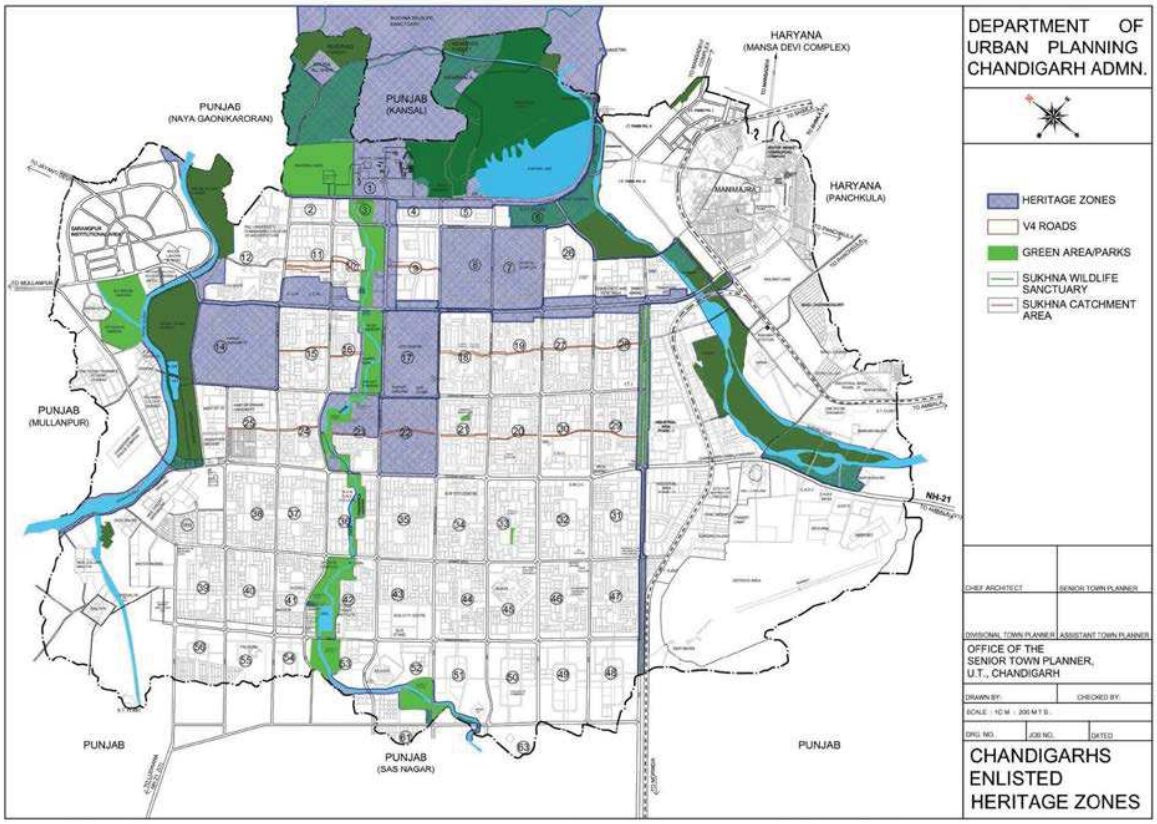


Image 17: Chandigarh Master Plan 2031 © Department of Urban Planning, Chandigarh

2.6.1 Legal Instruments

To control and regulate the development of the Chandigarh city in accordance the following acts are in place which covers the Capitol complex site under the regulations and development controls:

1. **The Capital of Punjab (Development & Regulation) Act, 1952**

Development within Chandigarh city is being managed through various kinds of development controls. Development controls within the city have its genesis in 'The Capital of Punjab (Development and Regulations) Act, 1952.

For the purpose of proper planning or development of Chandigarh, The Chief Administrator has the power to issue directions in respect of any site or building, either generally for the whole of Chandigarh or for any particular locality. Since the core and buffer zone of the WH site lies within the boundary of the Union Territory of Chandigarh, its management is regulated through the existing legislative framework i.e. The Capital of Punjab (Development &Regulations Act), 1952.

2. **The Chandigarh Tree Preservation Order, 1952.**

Development within Chandigarh city is being managed through various kinds of development controls. Development controls within the city have its genesis in 'The Capital of Punjab (Development and Regulations) Act, 1952.

For the purpose of proper planning or development of Chandigarh, The Chief Administrator has the power to issue directions in respect of any site or building, either generally for the whole of Chandigarh or for any particular locality. Since the core and buffer zone of the WH site lies within the boundary of the Union Territory of Chandigarh, its management is regulated through the existing legislative framework i.e. The Capital of Punjab (Development &Regulations Act), 1952.

3. **The Chandigarh Tree Preservation Order, 1952.**

The Chandigarh Tree Preservation Order 1952, was framed to preserve the protected trees, groups of trees, or woodland areas which form the green cover of the City. The rules prohibit the cutting of trees in any part of the woodland area.

4. **The Chandigarh Advertisement Control Order, 1954.**

Under the Chandigarh Advertisement Control Order, 1954, no person in Chandigarh can install or put up a board or banner without prior permission in writing from the competent authority. Chandigarh does not allow any hoarding or boards or banners or any sort of advertisement at Sukhna lake, all roundabouts, Madhya Marg, Jan Marg, and all other main streets. At places other than these, it is only with the due permission of the civic body commissioner that hoardings can be allowed upon payment of a specific advertisement fee.

5. **Central Air Prevention and Control of Pollution Act, 1988, declaring Chandigarh as an "Air Pollution Control Area"**.

The entire Union Territory of Chandigarh was declared an 'Air Pollution Control Area' under the Air (Prevention & Control of Pollution) Act, 1981 on 1st February 1988 by the Ministry of Environment & Forests. Earlier, the Central Pollution Control Board was enforcing the Environmental Acts/Rules in Chandigarh. After 1991, the Chandigarh Pollution Control Committee became responsible for performing the functions of the State Pollution Control Board in Chandigarh. The Ministry of Environment & Forests has notified National Ambient Air Quality Standards for various pollutants and the Chandigarh Pollution Control Committee monitors ambient air quality at five different locations and implements various Environmental Acts/Rules in Chandigarh. The ambient air quality of Chandigarh is now under pressure.

6. **Notification declaring the nominated property in the silent zone**

The Sukhna Lake in Chandigarh comprises an area of 3 sq km is an artificial lake at the foothills of the Himalayas, the Shivalik Hills, and forms part of the Capitol Parc designed by Le Corbusier. This rain-fed lake was created in 1958 by damming the Sukhna Choe, a seasonal stream coming down from the Shivalik Hills, and was a gift to Chandigarh citizens for the enjoyment of peace and tranquility. The area was declared a Silence Zone in 2002.

7. **Draft Chandigarh Master Plan 2031**

The Chandigarh Administration has finalized the Draft Chandigarh Master Plan 2031 which has given due emphasis to the protection of Chandigarh's enlisted heritage and the recommendations of the Expert Heritage Committee. The Draft Heritage Conservation Regulations are also being prepared. Any further intervention/development within the heritage property and the buffer will be regulated through the overall supervision of the notified Chandigarh Heritage Conservation Committee (CHCC).

8. **No Development Zone**

The Edict of Chandigarh prohibits any urban development to the north of the Capitol Complex. This was reiterated by the Chandigarh Urban Complex Plan prepared in 1977 by the Coordination Committee. This plan clearly indicates the area of Kansal Village (falling in Punjab) north of the Capitol complex as a "No Development Area'.

9. **Notified Eco-sensitive Zone** (Securing the Lake's Catchment and Wildlife Sanctuary):

As of 2018, the area comprising Sukhna Lake has been declared an eco-sensitive zone. The entire catchment of Sukhna Lake must be protected from any activities that may threaten the lake's lifespan. No development near the Wildlife Sanctuary should contravene the objectives of Wildlife conservation. The inscribed property of the Capitol complex lies within the Eco-sensitive Zone of Sukhna wildlife sanctuary.

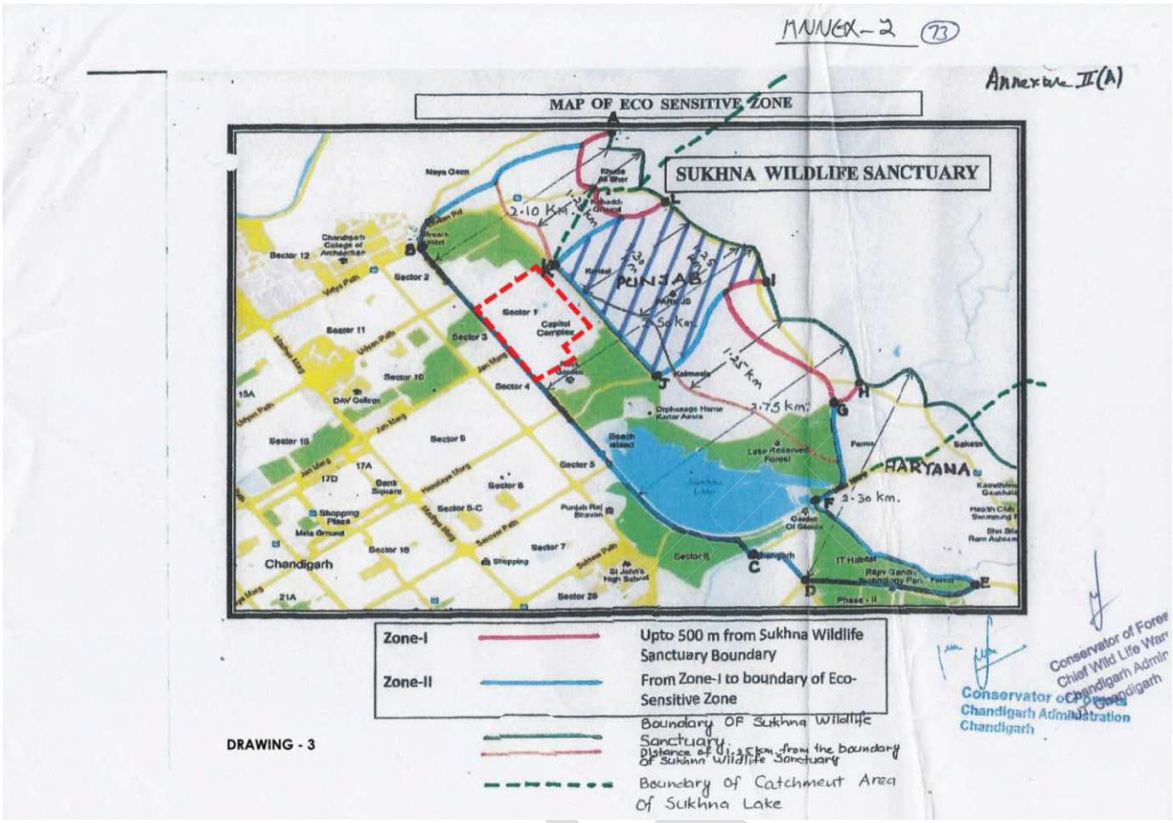


Image 13: Map showing the extent of Eco-sensitive Zone © UNESCO Nomination dossier, 2016

2.6.2 Analysis of the governance and heritage management system

The entire WH property including all its components tangible and intangible is under the jurisdiction of the Chandigarh Administration, Government of India. The buildings are jointly used by the states of Haryana and Punjab under the ownership of the Chandigarh Administration.

Although the property enjoys greater protection both locally and nationally and its preservation has been incorporated within the Chandigarh Master Plan 2031, the city's exponential growth has created a greater need for its physical protection. The WH site of the Capitol Complex is under good governance and due diligence in terms of monitoring and responsibility towards its protection which has resulted in regular maintenance works and the initiation of new projects.

The project of HVAC (Ancillary Structures) is planned to solve the issue related to the escalating need of thermal comfort of the users. However, the proposed project automatically triggers the issues of management, operation and maintenance of the Secretariat heritage building that might affect the OUV of the WH property. The collective impacts of development pressure might threaten the physical integrity of the WH site.

The existing instruments are in general sufficient to protect the WH property Capitol complex, but the following enforcements are necessary:

- The Capitol Complex should be mentioned as a UNESCO World Heritage site and prioritized as part of the urban developments and planning in the current and future Chandigarh Master Plans. The WH site should be highlighted among the other heritage buildings as part of the historic urban landscape in the City.
- To meet the protection requirements of the UNESCO World Heritage Convention, it would also be essential to encourage and establish regulations on the buffer zone of the inscribed property to protect its imageability and views.
- Planned actions should be taken in consultation with heritage experts for effective implementation and management of the WHS.
- The notified Eco-sensitive zone and water catchment areas should be protected from any environmental degradation activity including cutting of trees, removing top soil, disturbing the natural underground aquifer, pollution, etc.

3. The Proposed HVAC (Ancillary Structure) and Alternatives

This chapter gives a description of the proposed project of HVAC structures within the inscribed WHS of the Capitol Complex. The relevant data on the proposal and the current status are used as a basis for analysing the positive and negative effects of the project on the OUV of the Capitol Complex.

The HVAC system for the Secretariat building is planned to be located in the core area of WHS of the Capitol Complex to serve the secretariat building and hence it is proposed near the Secretariat building.

The proposal for HVAC and ancillary structures includes the following:

Proposed 1 (P1): Construction of an AC Plant Room and electric substation and installation of the related equipment within the new structure, in an underground structure.

Proposed 2 (P2): Installation of Cooling Tower, above ground structure.

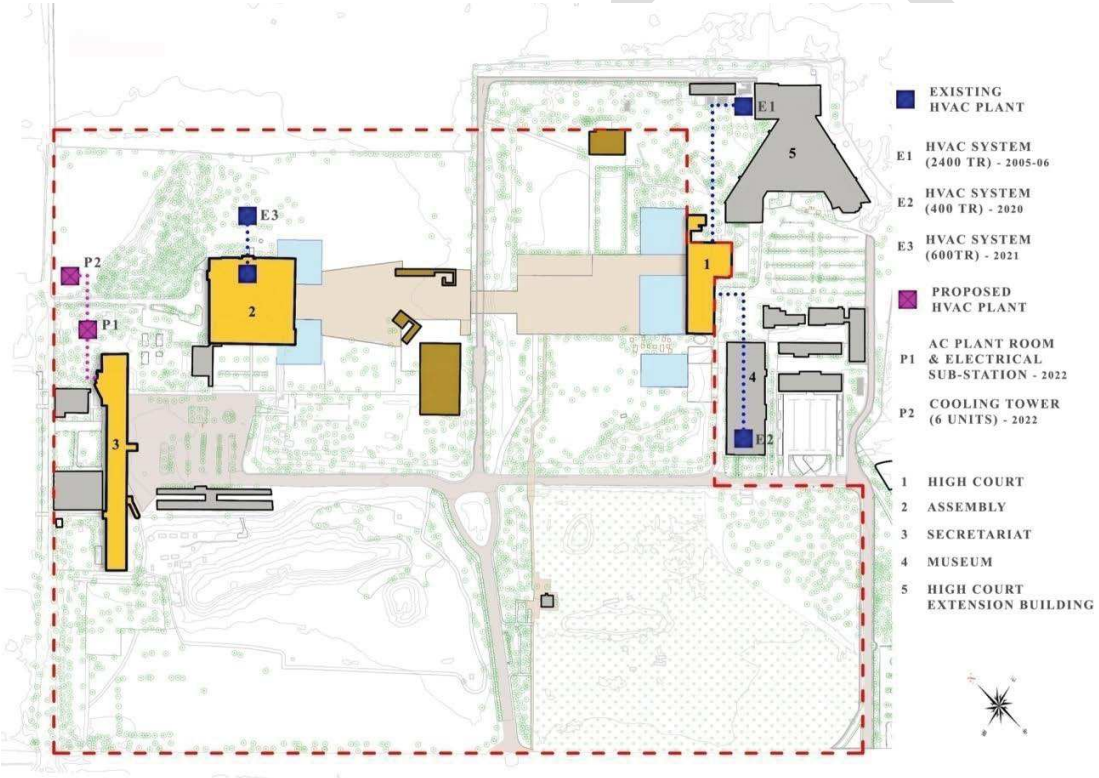


Image 14: Proposed HVAC structures near the Secretariat Building © Base; Lidar Drawing provided by the Engineering Department Union Territory, Chandigarh, modified by the HIA team

3.1. Current/existing HVAC at Capitol Complex

Although all the buildings in the Capitol Complex were planned to have integrated systems of natural ventilation. Several additions and upgrades have been made to provide for changing needs of the users. There are 3 HVAC plants existing within and around the core zone of the WHS. These are catering to the High Court and the Assembly buildings. It has been determined by the authorities to equip and upgrade the secretariat Building with new systems as well.

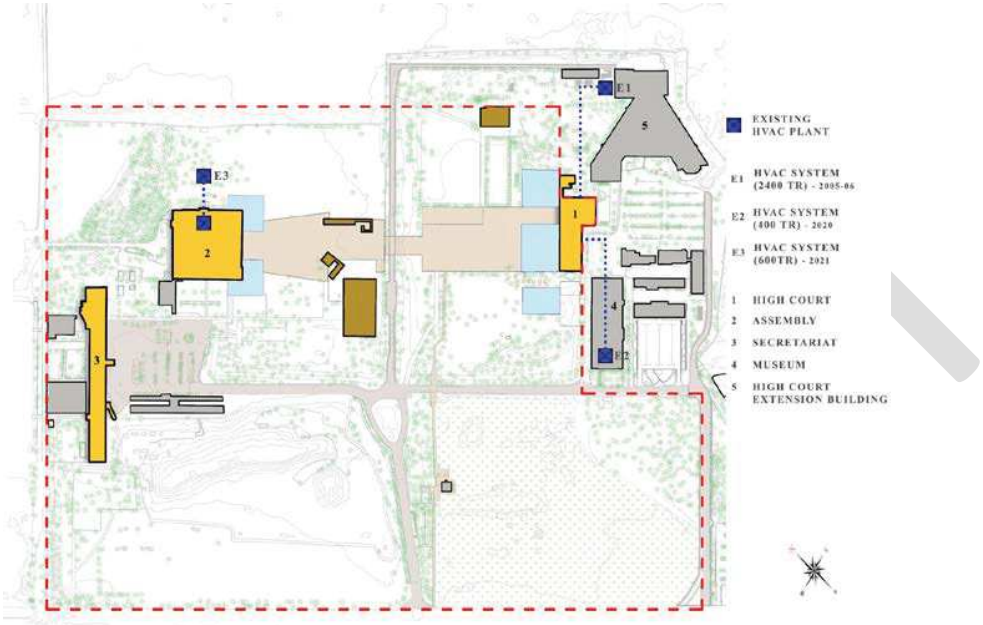


Image 15: Existing HVAC structures on the WHS © Base; Lidar Drawing provided by the Engineering Department Union Territory, Chandigarh, modified by the HIA team

Originally the heritage buildings in the WHS Capitol Complex did not have any artificial cooling or heating systems and relied on natural and innovative bioclimatic solutions designed by Corbusier. Le Corbusier's works in India provided breakthrough innovations at the time in the fields of architectural theory and practice and the use of materials and techniques for implementation.

Coboursier early experiments with bioclimatic solutions involved intensive use of brise-soleils (a device, such as a perforated screen or louvres, for shutting out direct or excessive sunlight.) and double-skin roofs to control the effects of solar radiation, the care given to the orientation and design of openings to create natural ventilation, the use of reflecting pools for recovery of rainwater and better thermal control, of terraced gardens, etc., all are technical choices in line with an environmentally responsible approach to architecture. In this respect, Le Corbusier's achievements announce present-day principles of passive architecture. Reducing dependence on fossil fuels, he limited the burden of already limited resources, and reduced future operating costs, while providing real thermal comfort.[3]

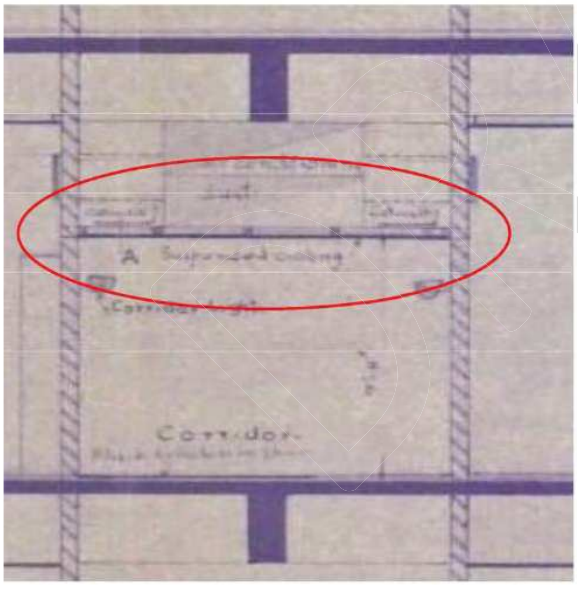
[3] "The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement - UNESCO World Heritage Centre."

With growing needs and changes in climatic conditions, the natural ventilation of the buildings of the Capitol Complex have been augmented by installation of individual AC units and other systems in the past. The current network of cooling and heating systems in the Capitol Complex comprises ground structures including substations, and underground and overhead cables.

3.1.1 Secretariat Building

The Secretariat building was planned with very well protected recessed windows or brise-soleil on facades relieving the users of intense heat in the interiors. The doubly loaded corridors placed in linear manner also allowed for ample cross ventilation. Climate control in this building with its enormous bands of glazing , is achieved by the provision of adjustable aerators set behind wire mesh. The undulatory glass panels are well protected against the sun and rain by a grill of brise-soleil on the two main facades.

The secretariat building is currently being cooled by individual split air conditioning units whose outdoor units are located outside in balconies on both southeast and northwest facades hampering the physical access and visual integrity of the site. On the third floor, an original air conditioning duct is present which is concealed by a false ceiling.



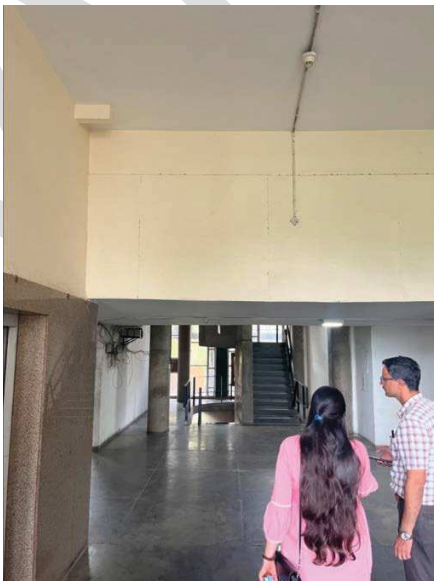


Image 16: Archival drawing showing the suspended ceiling in the corridor

Image 17: Existing False ceiling in the corridor on the third floor

Image 18: AC units on the South East facade of the Secretariat building

3.1.2 The Assembly Palace

The Assembly Palace like secretariat was provided with recessed windows which were operable. The pools in the vicinity of the building also helped the micro climate to be balanced.

The assembly Palace is served by an AC plant room (E3) of 600TR which was installed recently in 2021. This is located on the rear side of the Assembly place and consists of 3 cooling towers and a generator and a HVAC unit at the basement of the building. The structure is also currently served by existing split Air Conditioning units, most of which are visible on the facade.

Broadband cables and electrical wires can be seen hanging on the facade of the structure.

Image 19 Electrical substation adjacent to the building

Image 20: E3; Generator and 3 cooling towers

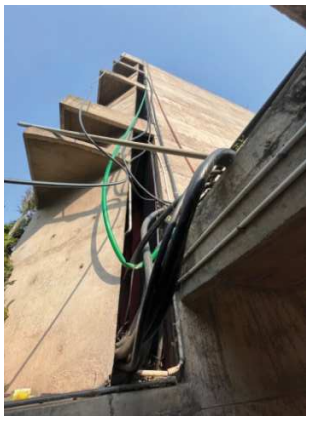


Image 21: Electric Cable on the Facade

Image 22: AC units on the South East facade of the Secretariat

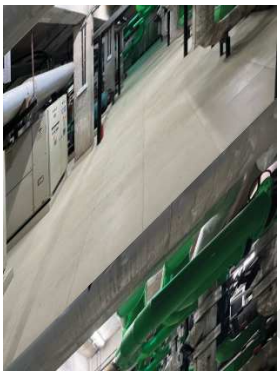
3.1.3 The High Court

The design of the High Court illustrates a true response to the harsh climate by provision of a double roof, where the upper roof placed over the lower roof was provided in the manner of a parasol, shading the lower roof. The space between the two roofs is left open to enable air currents to move. Brei Soleil, a constant feature throughout the buildings, was provided in high court as well where rooms also open into the balconies. The design of the structure is done in a way that the main façade faces the North-West in order to protect the interior space from the harsh rays of the sun.

The AC Units were installed along some windows, with AC Ducts & Electrical Wires running along shorter facades altering the original appearance of the facade. In addition to standalone AC units, the High court is currently served by two HVAC Units, one located at High Court Extension (E1)and the other at the Museum (E2). The E1 was installed in 2005-06 with a capacity of 2400 TR while the E2 unit is fairly recent from 2020 with a capacity of 400 TR. E1 primarily serves all the 69 courtrooms in the High Court and High Court Extension building. In the high court building, rooms 1 to 9 are heritage courtrooms and only courtrooms 6 and 9 are currently being served by the HVAC unit E1. The first and second floors of the High Court are being served by E2.

Image 23: AC units on the façade, High Court

Image 24: Cooling units on the terrace, High Court



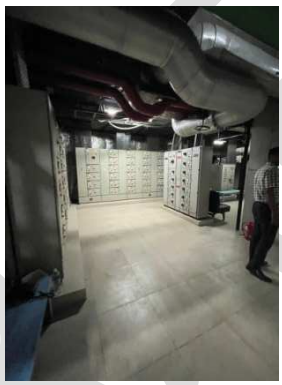


Image 25, 26, 27: E1, HVAC Plant located in High Court Extension building

Image 28, 29, 30 :E2, HVAC Plant located in the Museum building

3.2 Need and Objectives of Proposed HVAC (Ancillary Structures)

The WHS of the Capitol complex was planned and executed in the 1950s, since then due to global warming and climate change, there has been an increase in the temperature throughout the country. With the increase in population and number of vehicles, the emission of greenhouse gases has increased over the past decades in Chandigarh city. Hence, there is an escalating need for air conditioning in heritage buildings.

The secretariat building was planned to have natural ventilation like all other buildings in the Capitol Complex but with changing climatic conditions as mentioned above and to cater to different users and visitors and space needs multiple new Stand alone AC units were installed in the past.

Around 7,500 employees, with nearly 2,700 visitors, use the Secretariat on a daily basis making it the most trafficked and used building in the Capitol Complex. Originally planned to accommodate 6,000 employees and visitors, this building is faced with an increased footfall and pressures of space usage and optimisation, resulting in sub-division of spaces, use of balcony areas for additional offices and their enclosure, as well as introduction of services due to needs of the employees. This has led to installation of air conditioning units on the articulate facades of the building, presenting a disharmonious frontage and disrupting the beautiful geometric lines as conceived by Corbusier.(SMP 2018)

The primary objective is to fulfill the demand of thermal comfort, of the users. Therefore, rather than a piecemeal approach of having window units which also disturb the visual integrity of the facades, it was decided to have a holistic system of a new HVAC (Ancillary Structures) to serve the entire building.

3.3 Proposed HVAC (Ancillary Structures)

3.3.1 Location

The proposed HVAC (Ancillary Structures) are located towards the north end of the Secretariat building within the core area of the inscribed property along the Gill Station road. The areas marked on the map are proposed to be utilised for the projects. (Image). The two proposed components will cover an area of approx 9100.23 square ft. (or) 845.44 sq.m. & 2000 sft (or) 185.80 sqm respectively. The area is presently not in use for any specific purpose.

Image 31: Satellite view of the World Heritage site Capitol Complex showing the project area © Google earth, modified by the HIA team

The project site lies in the immediate proximity to the Secretariat Building and at considerable distance from the Assembly Palace of the WHS Capitol Complex. The Geometric hill, Tower of Shadows, and Martyrs memorial are not located in the proposed Ancillary structures in the immediate surroundings and are therefore not considered or directly impacted. The map below illustrates the physical distance of two proposed components from the secretariat.

The Secretariat is located on the southwest side of the proposed structures. HVAC and Electrical Substation or P1 is at a distance of about 9 meters from the Secretariat and 126 M from the Assembly Palace on its southeast. P2 or the proposed cooling tower is at a distance of 80 metres from the Secretariat and 151 meters from the Assembly.

A pre-existing structure is also located in the immediate surrounding area and is at a distance of 34 meters from the Secretariat and 118 meters from the Assembly Palace.

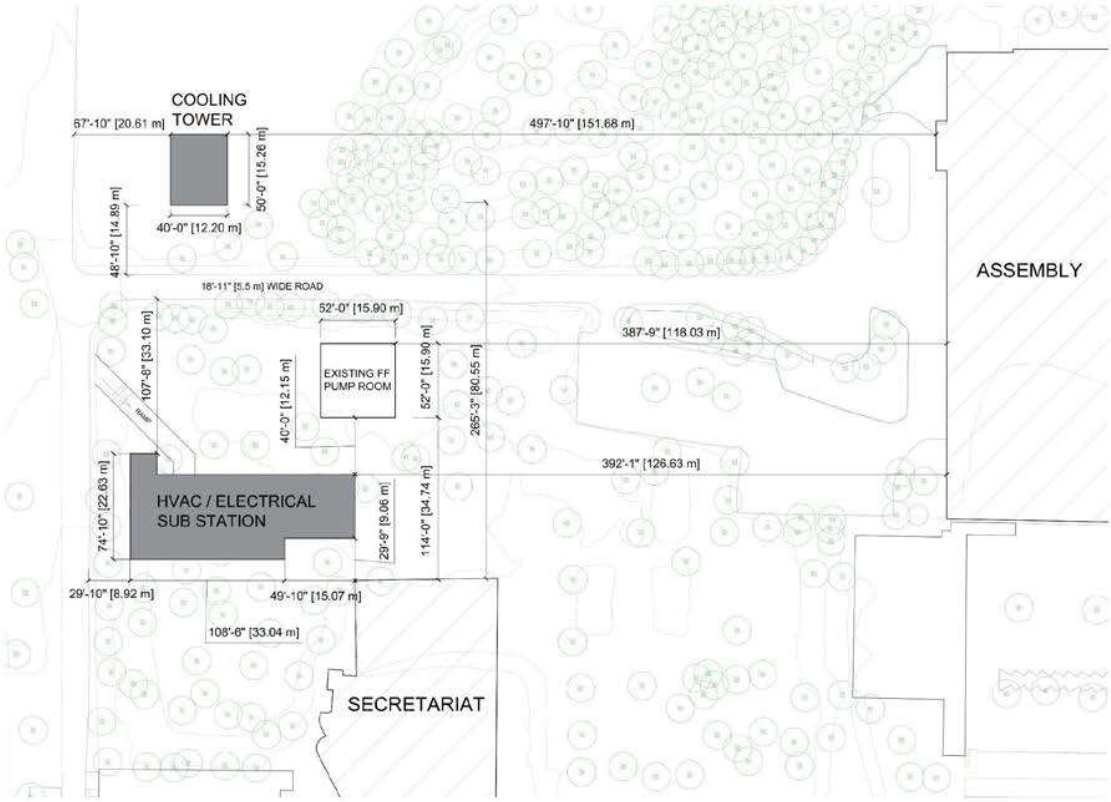


Image 32: Distance map of the proposed HVAC structures from the Secretariat and the Assembly Palace © Base; Lidar Drawing, modified by the HIA team

3.3.1 Site Description

A new HVAC plant has been proposed near the Secretariat building and is planned by the Chandigarh administration. The site for the proposal has been located near the backside (North-west side) of the secretariat building and is connected by the Gill St road. The site has been strategically chosen by the advantage of being near to the secretariat building and availability of more free space as compared to the areas with dense tree clusters nearby for the construction.

The proposal for HVAC and ancillary structures includes the following:

Proposed 1 (P1): Construction of an AC Plant Room and electric substation and installation of the related equipment within the new structure, in an underground structure.

Proposed 2 (P2): Installation of Cooling Tower, on ground structure.

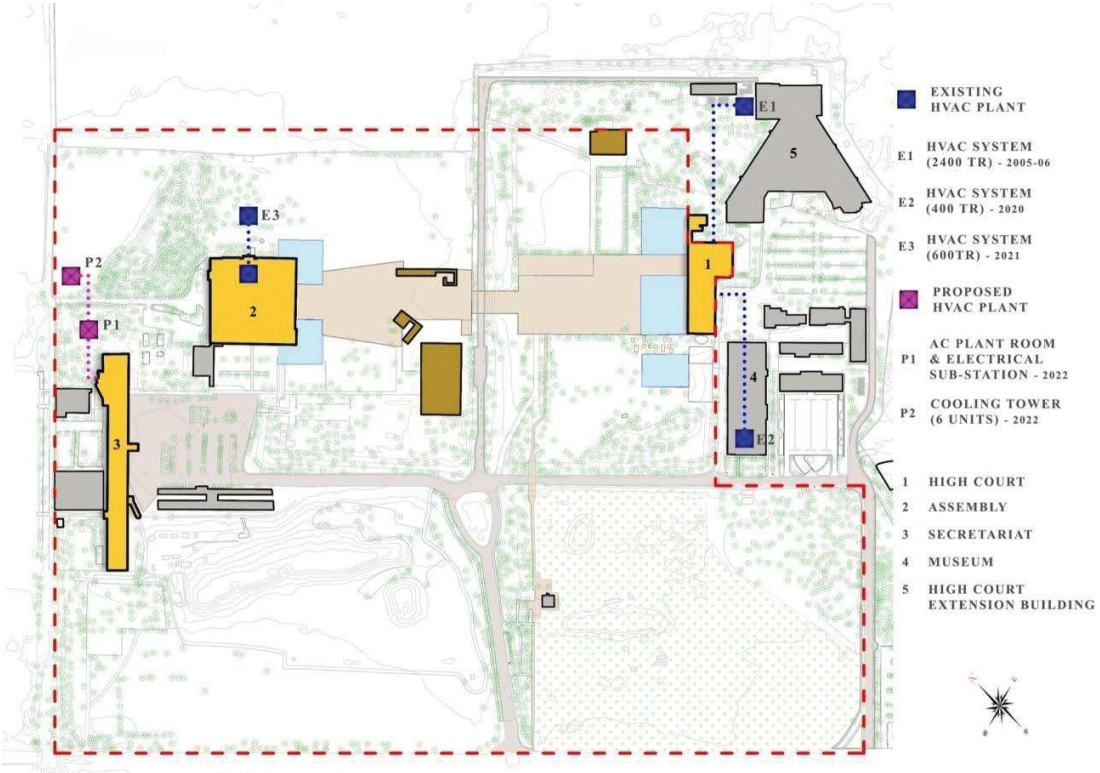


Image 33: Proposed HVAC structures near the Secretariat Building © Base; Lidar Drawing provided by the Engineering Department Union Territory, Chandigarh, modified by the HIA team

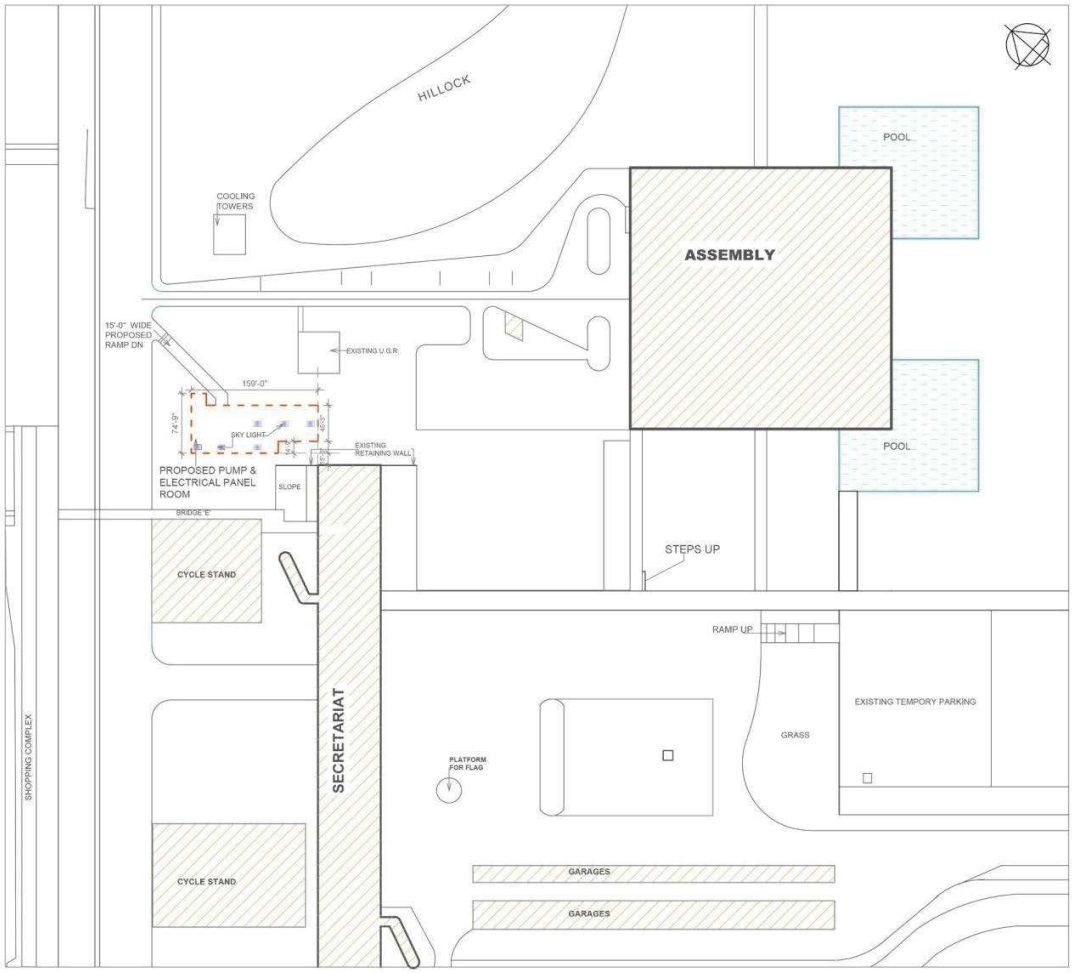


Image 34: Location of Proposed Site for AC plant Room with Electric Substation and Cooling tower

Image 35: Proposed Site for AC plant Room and Electric Substation

3.3.2 Architectural Description

The proposed project comprises of two structures:

AC Plant Room and Electric Substation

The AC plant and Electrical substation room is a rectangular underground structure which is located at the backside (North-west side) of the Secretariat building and is connected to the Gill St. road by a 15'-0" wide ramp. The underground structure is at a distance of 15'-0" from the Secretariat building with the entrance facing the North-east side. There is an underground reservoir at a distance of 40' from the proposed HVAC plant.

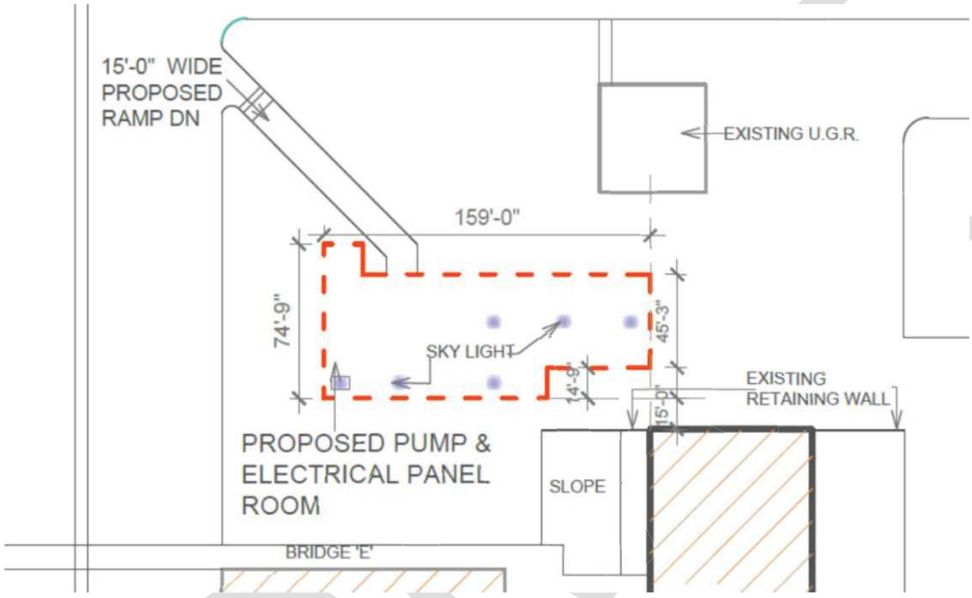


Image 36: Location of the proposed Pump & Electrical panel near Secretariat building

The form of the structure is a rectangle with offsets. The planning of the structure is as follows -

- The entire underground structure has 3 spaces - Entrance lobby, electrical control hall and pump hall.
- The entrance lobby is an open to sky structure with space required for 6 sets of DG.
- There are windows with the view of the Electrical control room and pump hall in the entrance lobby.
- While there is free passage to the entrance lobby,rolling shutters are used at the openings to other rooms.
- The Pump hall consists of chillers, chiller water pump, condenser water pump ect. and is designed with an area of 4802.86 sft (or) 446.20 sq.m.
- The Electrical control hall consists of L.T panel, H.T. panel and transformers and is designed with an area of 4297.38 sft (or) 399.24 sq.m with a height of 14"0" from the finished floor level.

- The structure is designed to provide spaces with natural daylighting by using skylights (6 in no. - 2 in the electrical control hall and 4 in the pump hall) each of 6'0" x 10' 0".
- The skylights are raised at a height of 4'-0" from the roof of the structure.
- The Entrance lobby is at 15'9" level from the N.G.L. whereas the other two rooms are at a level of 14'-9" and are connected to the lobby by a ramp .

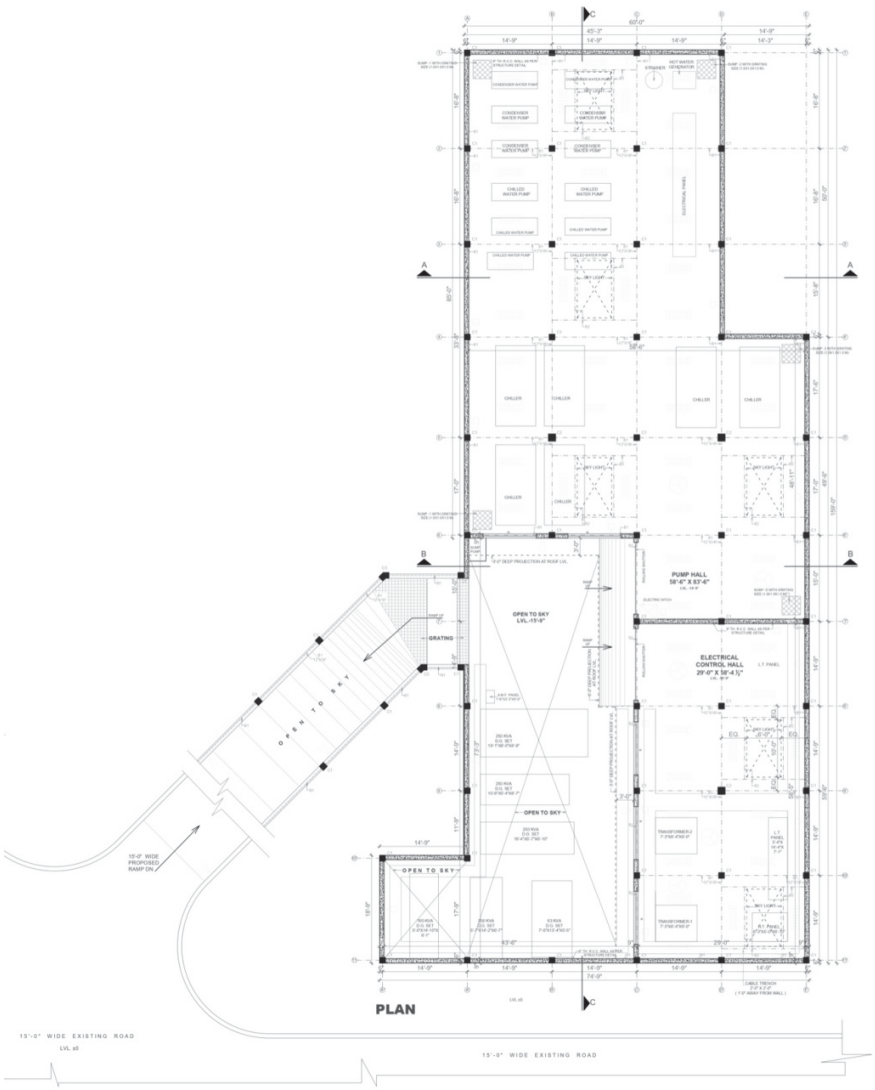


Image 37: Proposed plan of the HVAC structures near the Secretariat Building © Engineering Department Union Territory Chandigarh

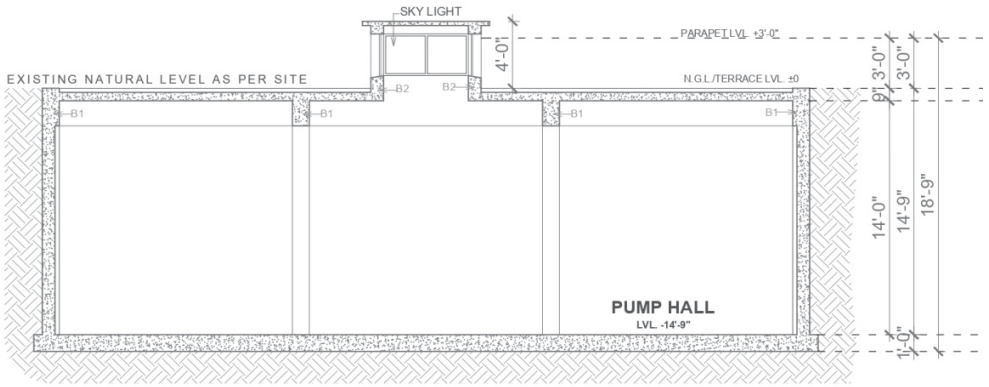


Image 38: Proposed Section A-A of the HVAC structures near the Secretariat Building © Engineering Department Union Territory Chandigarh

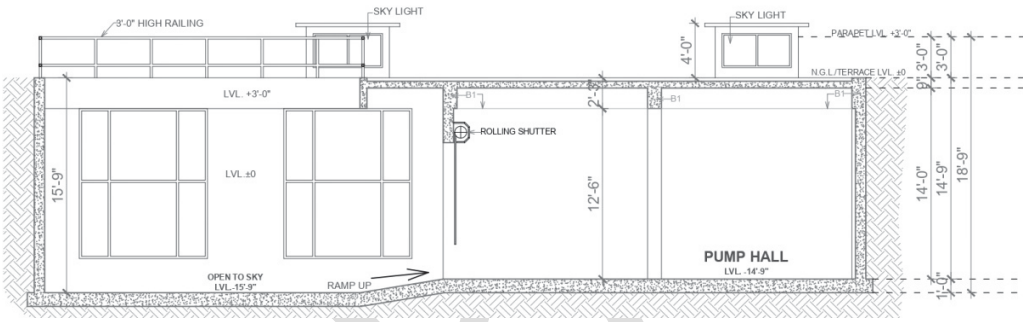


Image 39: Proposed Section B-B of the HVAC structures near the Secretariat Building © Engineering Department Union Territory Chandigarh

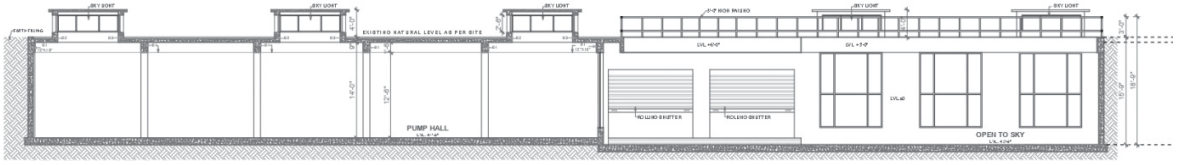


Image 40: Proposed Section C-C of the HVAC structures near the Secretariat Building © Engineering Department Union Territory Chandigarh

Cooling Tower (40'X50')

A cooling tower of 6 units has been proposed for the secretariat building. Estimated area allotted for the cooling towers is 2000 sq ft (or) 185.80 sq.m. and is located at 53.5m (175'- 10") approximately from the AC plant room.The capacity of the HVAC system for the Punjab and Haryana Civil Secretariat is 1800TR, the pipe sizes and duct sizes are calculated on the design basis for different levels and areas.

Image 41: Proposed Cooling Tower near the Secretariat Building © Engineering Department Union Territory Chandigarh

3.3.3 Construction details

The substation structure (E1) is primarily constructed out of Concrete walls and roof. The details of the foundation are currently unavailable.

The cooling towers are most likely constructed of factory made materials commonly used on cooling towers for HVAC projects like galvanised steel, stainless steel and FRP (Fibre reinforced Polyester).

3.4 Key Inferences

Most structures where AC units were installed have been upgraded to central systems to provide better comfort and avoid the visual and physical clutter on the facades with the exception of the Secretariat building. This ad hoc additions occurred in the past due to lack of any guidelines or governance policies and has impacted the value of the structures. The natural ventilation has not been able to be used in its optimal strength because most balconies have been converted into usable spaces.

Since the site is and shall continue to be extensively used, incorporation of modern day services like computer networking, increased electrical load, air conditioning, lighting and illumination, modern means of security and surveillance etc need to be incorporated sensitively to maintain the functionality of the complex with minimum damage to the built fabric.[4]

The proposed HVAC system with two structures will provide respite and cater to the current needs of the Secretariat building. The location of the structures is closer to the building for better access and due to the provision of free space nearby. No other structures are getting altered or affected. With the new system in effect, alteration of existing built fabric of the Secretariat Building will also take place during installation.

[4] "State of Conservation Report," 2017.

3.5 Alternatives of the proposed HVAC (Ancillary Structures)

In this section, the three alternatives of the proposed project are assessed including the 'no project' alternative. The scenarios with or without the HVAC (Ancillary Structure) project are evaluated in order to establish the most sustainable option that both protects World Heritage and achieves the objectives of the proposed action.

3.5.1 Scenario 1: "No Project"

Before discussing possible alternatives for the proposed HVAC ancillary structures, it is necessary to evaluate the option of "no project". As the project is proposed for the Secretariat (heritage) building, it can only be justified if it delivers substantial environmental, social, and economic benefits that outweigh any impact it may cause on the OUV and heritage values. The primary objective of the proposed project of HVAC (Ancillary Structures) is to address the issues related to providing optimal thermal comfort to the users of Secretariat Building in the Capitol Complex.

Assessment of "No project" option

- Considering the needs of the user's thermal comfort there are multiple stand-alone AC units for each room that have been installed in the Secretariat building. Due to these multiple AC units, there is a threat to the original architectural fabric, spaces, features, and finishes of this heritage building.
- The heritage building aesthetics are being compromised by installing several types of AC units in an unplanned manner on the facades. In addition to the AC units, associated ducting runs on the historic terraces and at the exteriors of the facades of the secretariat building.
- Due to these adhoc AC units, moisture has been introduced in some spaces which is detrimental to the structure and finishes.

3.5.2 Scenario 2: "An Alternative Project"

The broad alternatives are explored to cater to the need of providing a centralised HVAC system for the Secretariat building.

As per the baseline assessment, the following alternatives are explored:

- A holistic approach needs to be adopted for enhancing the micro-climate and for a significant impact on managing the rising temperature and a comfortable interior environment.
- It may not be necessary to have central air-conditioning in mild climate interior spaces in the building like basements and other shaded rooms.
- For the thermal comfort in the entire building original/existing natural ventilation systems could be improved through the use of operable windows, exhaust fans, and other "low-tech" means for current needs.
- Modern standards for climate control developed for new construction may not be achievable or desirable for this heritage building. In this case, the lowest level of intervention needed to successfully accomplish the job should be selected. A hybrid system of existing natural ventilation along with a mechanical system that provides/fulfils the optimal desired thermal comfort could be explored.
- Advanced studies based on field data to calculate the current climatic calculations shall be undertaken and HVAC should be provided for the deficit.
- Incorporate uses to spaces that do not require radical reconfigurations of heritage spaces.
- Careful investigation of the historic elements should be carried out before integrating new components into historic elements like original/existing false ceilings. These could be optimally utilized instead of introducing new elements.
- An alternative scenario that simulates the indoor microclimate of heritage buildings should be developed considering the HVAC systems not running continuously should be developed.
- Energy efficient system to be considered to reducing the dependence on fossil fuels

3.5.3 Scenarios 3: "Proceeding with the proposed project"

The scenario of proceeding with the proposed project is assessed to determine its potential impacts on the WHS.

In the case of "Proceeding with the project"

- A systematic approach, involving conservation planning, design, and a follow-up program of monitoring and maintenance, can ensure that new systems are successfully added or existing systems are suitably upgraded while preserving the historic integrity of the building.
- The installation of an HVAC (heating, ventilation, air-conditioning) system requires new loads on the floors; new HVAC systems may also require cutting into the existing wall and floor system, which may affect the load bearing capacity, additional dead load on the structure and the foundation's stability. The structural integrity should be assessed before executing these irreversible interventions.
- Installing HVAC and applying modern standards of interior climate comfort to secretariat buildings in Capitol Complex might be detrimental to historic materials and decorative finishes. Appropriate locations, low-impact techniques and matching refinishing methods should be explored so that the visual integrity remains as intact as possible.
- With the introduction of new proposed HVAC systems, climatic conditions within the building will be altered therefore a plan should be considered to control high humidity conditions. Devices like moisture meters and data loggers could be utilised to monitor the humidity levels and for higher levels solutions could be provided to reduce the moisture so that the building fabric is not affected long term.
- The proposed HVAC systems require upgrading or replacement in approximately 20 years due to wear and tear or the availability of new technology. Therefore, the heritage building would be altered or otherwise sacrificed in an effort to meet short-term systems objectives. To prevent damage to the heritage building it is important to decommission the defunct HVAC system in compliance with the then-current international standards. During and after decommissioning when the new systems are introduced, the current interventions in the built fabric should be utilized instead of creating new ones as much as possible, for example, the drilling created for ductwork.

4. Identification and Predicting Impacts

In this chapter the potential impacts of the proposed project of HVAC (Ancillary Structures) are identified. The interaction between elements of the proposed action and identified impacts are presented in table 4.

In addition, the direct, indirect, and cumulative impacts of the HVAC (Ancillary Structures) on the attributes of the WHS are assessed considering that impacts may occur at any stage of the proposed action.

4.1 Elements of the proposed action and types of impacts

Based on the proposed action's entire life cycle and characteristics six elements of actions are identified that have the potential to cause impacts (direct, indirect, and cumulative) on the attributes.

The proposed HVAC ancillary structures will have interventions such as underground, above ground, on the surface, and within the heritage building.

Elements of the proposed action of HVAC (Ancillary Structures)

i. Underground Installation of AC Plant Room & Electric Sub-Station
ii. Above-ground Installation of Cooling Towers (6 no @ 15'0" height)
iii. Installation of HVAC distribution system to and within the heritage building
iv. Operation and maintenance of the HVAC system after its installation.
v. Decommissioning of HVAC system after its End of Life (expected lifespan 20 years)
vi. Recovery phase to reintegrate the affected areas.

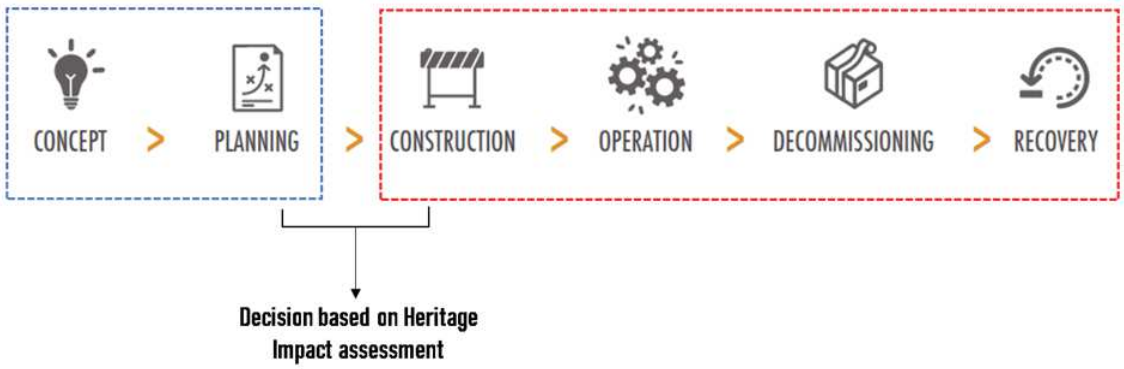


Image 42: Stages of the Proposed project

There are different stages in the development and implementation of the proposed project (Image-). The two stages of concept and planning of the proposed HVAC (Ancillary Structures) have taken place and the construction, operation, decommissioning and recovery phases will take place in the future. The impact assessment is carried out before construction or any other preparatory actions that would take place on the ground if approved.

Three types of impacts are identified as per the **Guidance and toolkit for impact assessment** following:

Direct Impacts

Direct impact is the result of a cause-and-effect relationship between a project and a specific attribute of World Heritage or other environmental components.

Indirect Impacts

Indirect impacts are impacts on the environment that are not a direct result of the project, often produced away from or as a result of a complex pathway. Sometimes referred to as 'second' or 'third-level' impacts, or 'secondary' impacts.

Cumulative impacts

A cumulative impact results from the environmental impacts of a project combined with the same environmental impacts of other past, existing, or reasonably foreseeable future projects or activities, including those that may be enabled by the project. New proposals may have less impact because the heritage has already been severely compromised by previous agents of change, or they may add to the existing impacts in a cumulative manner making existing situations much worse.

Legend for types of Impacts

4.2 Identifying potential Impacts

The following table is prepared to identify and ascertain the impacts (environmental and social) of the proposed development of HVAC (Ancillary Structures) on the OUV of the WH site Capitol Complex. The table also helps in determining the type of the characteristics of these potential impacts, including disclosure of any uncertainty. It highlights what changes to OUV and other heritage/conservation values would occur as a result of the proposed action which is both positive and negative.

Table 4: Identifying Potential Impacts

Attributes	Element of Proposed Action that has the Potential to Cause an Impact					
	HVAC Ancillary Structures					
	Construction of Underground AC Plant Room & Electric Sub-Station	Cooling Towers (Above Ground)	Construction of Ramp (15'-0" Wide)	Installation of HVAC distribution system to and within the heritage building	Operation of HVAC system	Decommissioning HVAC System (Expected life Span 20 years)
Historic Urban Layout				May alter the historic urban layout combined with the existing HVAC system of the overall site		
Site Planning	Change in the geometric layout	Change in original site aesthetic	Alteration in original site access and circulation	Possible change in site levels		Decommissioning may cause damage to site planning
Original Landscape composition	Alteration to existing landscape composition	Changes in original spatial composition	Changes in the orientation & circulation			

Heritage buildings (Secretariat Building)	May cause threat to the substructure due to its proximity to the Secretariat Building		Alteration in access to the building	**Opportunity to provide centralized air conditioning system for the Secretariat building and remove the multiple stand-alone AC units from the historic facade (+)** May cause threat to historic elements while integrating new components into existing heritage building (-)	Expected threats from the operational and maintenance procedures on regular basis	Dismantling and replacing the HVAC system will cause substantial damage to historic fabric
Assembly				Expected environmental threats from the use of heavy machinery, pollution and noise		
High Court				Same as above		
Monuments (The Geometric Hill, Open Hand, Tower of Shadows, Martyrs Monument)				Same as above		
Esplanade (Plaza)				Same as above		

Original roads and pathways			Changes in the site orientation and circulation			Changes in existing circulation may occur while replacing the old HVAC system
Imageability & Views		Disturb the original aesthetic of site			Disturb the serenity of the site	
Artificial mounds	the profile of original mounds may change	Alteration in the mounds to create flat surface	Change in site topography & levels	Change may occur due to trenches for pipelines		Changes in original mounds for removing underground pipes and ductwork
Green Open Spaces & Heterogeneous plantation	Cutting of trees may cause damage to micro-climate	Creation of more hard surface would destroy existing plantation	Removal of existing vegetation may alter the surface			Damage from removal of the topsoil and plantation for replacing underground pipes
Adjoining Sukhna Lake & water catchment area	Vegetation and topsoil removal may lead to long-term natural disaster	Natural surface drainage would be affected		Expected environmental threats from the use of heavy machinery, pollution and noise		

4.3 Results

For the proposed HVAC (Ancillary Structures), it is determined that the proposal will have potentially positive and negative **impacts including direct, indirect, and cumulative impacts** on the attributes of the Capitol Complex.

Considering the stages of proposed action the following impacts are identified:

- The impacts during the construction stage of the HVAC (Ancillary Structures) are direct and cumulative impacts. The direct impacts are alteration and disturbance to the original site planning, landscape composition, site orientation, and circulation caused by underground excavation and construction-related activities.
- The cumulative impacts are amplified by the proposed project causing environmental threats, and disturbance to the spirit and feeling of the WH site.
- The new proposed system would also provide an opportunity to protect the secretariat heritage building from the ad-hoc additions of multiple air-conditioning units. Energy efficiency provides optimal thermal comfort to its users.
- The impacts from the operational and maintenance stage of the HVAC system are indirect impacts such as electrical safety hazards, chemical exposure, health and well-being including respiratory hazards and airborne diseases for the users.
- The impacts from the decommissioning stage of the HVAC (Ancillary Structures) project are direct impacts that would cause physical damage to the attributes of the site. Decommissioning will occur at the end of a project's lifetime which is expected to be 20 years. It will involve removing the old components of the HVAC system which might be replaced by a new system or as planned..
- The impacts during the recovery stage of the HVAC (Ancillary Structures) will be prepared based on the areas that are disturbed after the construction, operation and decommissioning stage. The remediation or recovery plan will be prepared to protect, conserve and manage the historic elements.

Further, based on the identified potential impacts, in the next section, an informed prediction is made about the likely scale and nature of these impacts (Table 5). The predictions of the impacts include a range of characteristics such as magnitude, type, extent, duration, frequency, reversibility, and likelihood.

5. Evaluation of impacts

After understanding the potential impacts this chapter evaluates the level of impacts and whether the identified impacts of the HVAC (Ancillary Structures) are significant or not on the basis of the characteristic of impacts.

A step-by-step approach is considered for evaluating the impacts including the description of identified impacts on the attribute of the WHS.

i. The interaction between the elements of the proposed action and attributes
ii. The description of potential impacts that may impact the attribute
iii. The characteristics of each element of the proposed action are explored in order to evaluate the frequency, duration, and reversibility of the action.
iv. The nature of the change to the attribute is evaluated such as reversibility, longevity, degree, and quality of change.
v. Final evaluation of the degree of impact from major to minor, whether positive or negative.

5.1 Degree of impacts

The following degree of impacts (negative or positive) are evaluated:

- Neutral: Impact reveals that no change would occur to the attribute.
- Minor: Impact shows that the change would be negligible.
- Moderate: Impact shows that there would be some change to the attribute.
- Major: Impact shows that there would be a large change to the attribute.

Table 5: Evaluation of Impacts

Major negative impact	Moderate negative impact	Minor negative impact	Neutral	Minor positive impact	Moderate positive impact	Major positive impact

Elements of Proposed action	Attribute	Description of Potential Impact	Frequency of action	Duration of action	Reversibility of action	Reversibility of change to the attribute	Longevity of change to the attribute	Degree of change to the attribute	Quality of change to the attribute	Evaluation of impact
			Once/Intermittent/ Continuous	Short-term/ Long-term	Reversible/ irreversible	Reversible/ Irreversible	Temporary /Permanent	None/Negligible /Some/Large	Positive/Negative change	Neutral/minor/moderate/major impact (negative and positive)
Construction of Underground AC Plant Room & Electric Sub-Station	**Site Planning**	Change in the geometric layout planning	Continuous	Long-term	Irreversible	Irreversible	Permanent	Some	Negative	**Moderate negative**
	Original Landscape composition	Alteration to eixisting landscape composition	Continuous	Long-term	Irreversible	Irreversible	Permanent	Some	Negative	**Moderate negative**
	Heritage building (Secretariat Building)	May cause threat to the substrucutre due to its proximity to the Secretariat Building	Continuous	Short-term	Reversible	Reversible	Temporary	Some	Positive	**Moderate negative**
	Artificial mounds	The profile of original mounds may change	Continuous	Long-term	Reversible	Reversible	Permanent	Some	Negative	**Moderate negative**
	Green Open Spaces & Heterogeneous plantation	Cutting of trees may cause damage to micro-climate	Continuous	Long-term	Irreversible	Reversible	Permanent	Some	Negative	**Minor negative**
	Adjoining Sukhna Lake & water catchment area	Vegetation and top soil removal may lead to long-term natural disaster	Continuous	Long-term	Irreversible	Reversible	Permanent	Some	Negative	**Minor negative**
Above - ground Cooling Towers (6 units @ 15 feet height)	**Site Planning**	Change in original site levels and aesthetic	Continuous	Long-term	Irreversible	Irreversible	Permanent	Some	Negative	**Moderate negative**
	Original Landscape composition	Changes in original spatial composition	Continuous	Long-term	Irreversible	Irreversible	Permanent	Some	Negative	**Moderate negative**
	Imageability & Views	Disturb the original aesthetic of site	Continuous	Long-term	Irreversible	Irreversible	Permanent	Some	Negative	Moderate negative
	Artificial mounds	Alteration in the mounds to create flat surface	Continuous	Long-term	Reversible	Reversible	Permanent	Some	Negative	Moderate negative

Elements of Proposed action	Attribute	Description of Potential Impact	Frequency of action	Duration of action	Reversibility of action	Reversibility of change to the attribute	Longevity of change to the attribute	Degree of change to the attribute	Quality of change to the attribute	Evaluation of impact
			Once/Intermittent/ Continuous	Short-term/ Long-term	Reversible/ irreversible	Reversible/ Irreversible	Temporary /Permanent	None/Negligible /Some/Large	Positive/Negative change	Neutral/minor/moderate/major impact (negative and positive)
	Green Open Spaces & Heterogeneous plantation	Creation of more hard surface would destroy existing plantation	Continuous	Long-term	Irreversible	Reversible	Permanent	Some	Negative	**Minor negative**
	Adjoining Sukhna Lake & water catchment area	Natural surface drainage would be affected	Continuous	Long-term	Irreversible	Reversible	Permanent	Some	Negative	**Minor negative**
Installation of HVAC distribution system to and within the heritage building	**Site Planning**	Alteration in original site access and circulation	Continuous	Long-term	Irreversible	Irreversible	Permanent	Large	Negative	Moderate negative
	Original Landscape composition	Changes in the orientation & circulation	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Moderate negative
	Heritage buildings (Secretariat Building)	**Opportunity to provide centralized air conditioning system for the Secretariat building and remove the multiple stand-alone AC units**	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	**Moderate positive**
		May cause threat to historic elements while integrating new components into existing heritage building (-)	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Moderate negative
	Original roads and pathways	Changes in the site orientation and circulation	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	**Minor negative**
	Artificial mounds	Change in site topography & levels	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Moderate negative
	Green Open Spaces & Heterogeneous plantation	Removal of existing vegetation may alter the surface	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	**Minor negative**

Elements of Proposed action	Attribute	Description of Potential Impact	Frequency of action	Duration of action	Reversibility of action	Reversibility of change to the attribute	Longevity of change to the attribute	Degree of change to the attribute	Quality of change to the attribute	Evaluation of impact
			Once/Intermittent/ Continuous	Short-term/ Long-term	Reversible/ irreversible	Reversible/ Irreversible	Temporary /Permanent	None/Negligible /Some/Large	Positive/Negative change	Neutral/minor/moderate/major impact (negative and positive)
Operation of HVAC system	**Heritage buildings (Secretariat Building)**	Expected threats from the operational and maintenance procedures on regular basis	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Moderate negative
	Imageability & Views	Disturb the serenity of the site	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Moderate negative
Decommissioning HVAC System (Expected life Span 20 years)	**Site Planning**	Decommissioning may cause damage to site planning	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Moderate negative
	Heritage buildings (Secretariat Building)	Dismantling and replacing the HVAC system will cause substantial damage to historic fabric	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Moderate negative
	Original roads and pathways	Changes in existing circulation may occur while replacing the old HVAC system	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Moderate negative
	Artificial mounds	Changes in original mounds for removing underground pipes and ductwork	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Moderate negative
	Green Open Spaces & Heterogeneous plantation	Damage from removal of the topsoil and plantation for replacing underground pipes	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	**Minor negative**

5.2 Results

The evaluation shows whether the likely impacts of the proposed project of HVAC (Ancillary Structures) are significant or not.

Considering the degree of impacts, the results are :

- Most of the elements of the proposed HVAC (Ancillary Structures) project will have moderate negative impacts on the attribute of OUV of the Capitol Complex. These actions are long-term, irreversible, and involve a continuous change to the attribute which may cause damage to the OUV of the WH Site.
- The identified moderate negative impacts could be reduced or minimised to an acceptable level in order to avoid the negative impacts on the OUV.
- The positive impact of the HVAC (Ancillary Structures) will create an opportunity to provide a centralised air conditioning system for the Secretariat building, remove the multiple stand-alone AC units from the historic façade and provide optimal thermal comfort to its users.
- The moderate positive impacts could be enhanced by careful planning and reversible interventions. The ideal HVAC system may not be achievable for the heritage building due to space requirement for its equipments, operation and maintenance cost and other factors beyond the control. However, significant historic spaces, finishes, and features could be preserved.
- In addition, more positive impacts could be produced and enhanced by using minimal intrusion in the heritage building.

Further, based on the evaluation of impacts, in the next section, a mitigation hierarchy and measures are developed.

6. Mitigation and Enhancement

In this chapter, a mitigation hierarchy and appropriate mitigation measures are assessed that ensure the protection of the OUV of World Heritage property against the proposed HVAC (Ancillary Structures) project. In the case of the WHS of the Capitol Complex, it is suggested to avoid entirely or minimize the negative impacts to an extent that there are no longer any concerns for WHS and enhancement of positive impact. The identified negative impacts on OUV can be avoided, by considering mitigation measures throughout the process. In addition, the best possible solution would improve the design and implementation of the project to achieve positive impacts.

6.1 Mitigation Hierarchy

The mitigation hierarchy is adopted for the assessment, ranging from the preferred 'avoidance', through 'minimize', 'rectify' and 'reduce' to 'offset'(Image 28). As specified previously, the OUV of the WHS is irreplaceable and cannot be 'offset'. For the WHS of the Capitol Complex, it is best to avoid and minimize the negative impacts entirely. If in case, it is not possible to entirely avoid all negative impacts then they should be rectified and reduced to acceptable levels that cause no damage to the OUV the rectification measures.

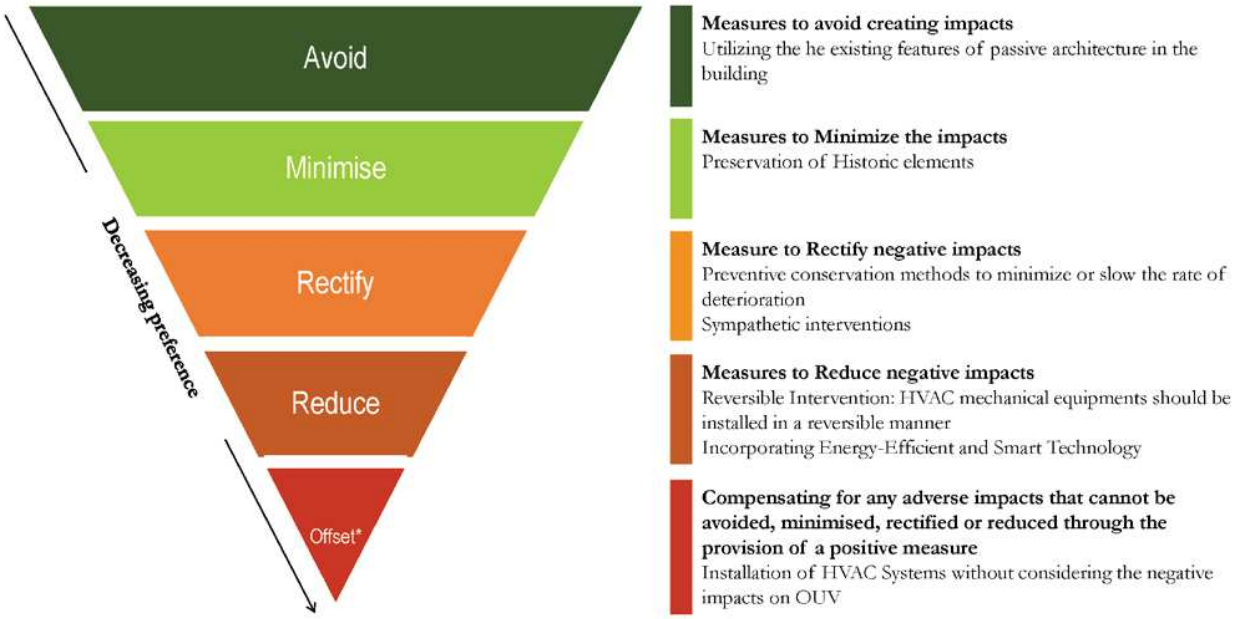


Image 43: Mitigation Hierarchy

6.2 Mitigation Measures

The following mitigation measures should be considered:

6.2.1 Utilizing the existing features of passive architecture in the building

The negative impacts could be mitigated by enhancing the building's existing bio-climatic features and microclimate of the site. The inscribed property of the Capitol complex revealed the intensive use of brise-soleils and double-skin roofs to control the effects of solar radiation, the care given to the orientation and design of openings to create natural ventilation, the use of reflecting pools for recovery of rainwater and better thermal control, use of terraced gardens, etc., all technical choices are in line with an environmentally responsible approach to architecture.

These should continue to be valued and used along with new appropriate energy-efficient systems to strengthen the existing bio-climatic features. This approach can result in a more appropriate design of systems, potentially reducing unbalanced cooling. A system should be chosen that is appropriate for the Secretariat to maximise the thermal benefits already existing in the building.

Various means for reducing the heating and cooling loads (and thereby the size of the equipment) should be investigated. Primary and secondary areas need to be identified. The zoned approach may be appropriate for heritage buildings with the specialised need for several uses, for different uses, with different external exposures, occupancy patterns, and delivery schedules for controlled air. Energy modeling for Secretariat building at the early stages of design utilising digital software could be carried out. Such systems should be selected that are compatible with historic fabric to the maximum efficiency while protecting the historical value.

6.2.2 Preventive conservation

Preventive conservation methods to minimise or reduce the rate of deterioration that may occur due to new HVAC systems should be adopted. Monitoring and preventative maintenance on a regular basis should take place to prevent damage to the historic structure including high humidity levels, electrical safety hazards, chemical exposure, respiratory hazards, and airborne diseases for the users. To prevent damage to the heritage building it is important to decommission the defunct HVAC system in compliance with the standards.

6.2.3 Sympathetic interventions

Interventions to the buildings should be strategized and planned to have a minimal impact on the historic buildings elements and its integrity. If some ceiling areas are planned to be lowered to accommodate ductwork, these should be in areas which are of low historic values. If modern HVAC systems are to be visible in historic spaces, consideration should be given to custom designing or to using smaller units in more locations to diminish their impact. If grilles are to be located in significant spaces, they should be designed to work within the existing historic spaces, materials, and interior aesthetics.

The new HVAC systems should be installed with a minimum of damage to the resource and should be visually compatible with the architecture of the building. Outside units could be covered or camouflaged in the surroundings so that industrial appearance doesn't overpower the site aesthetics.

The equipment such as the cooling tower which is to be located outside of the building should not impact the original appearance of the heritage building and site. Consideration should be given as to whether or not the HVAC system will be visible or hidden.

6.2.4 Preservation of Historic elements

Based on careful investigation, the preservation of significant historic spaces, finishes, and features need to be carried out for the minimum of damage to the heritage resource. Efforts must be made to protect the historic materials and systems in place with minimal intrusion from new HVAC systems.

The following points could be considered while installing a new HVAC system:

- Avoid cutting through the exterior walls.
- Retain the original architectural configurations, surfaces, and finishes as much as possible.
- Avoid making the ductwork or vents visible on the surfaces.
- Prevent moisture that can damage historic elements.
- Utilise existing ducts, false ceilings as much as possible.
- New finishes should be tried to match the existing.

6.2.5 Reversible Interventions

The HVAC mechanical equipment should be installed in a reversible manner to be removed in the future without further damage to the heritage building. Most mechanical systems require upgrading or replacement within 15-25 years due to wear and tear or the availability of improved technology. Therefore, historic buildings should not be greatly altered or otherwise sacrificed in an effort to meet short-term systems objectives. The ideal system may not be achievable for each historic resource due to cost, space limitations, code requirements, or other factors beyond the control. However, significant historic spaces, finishes, and features can be preserved in almost every case, even given the limitations.

6.2.6 Incorporating Energy-Efficient and Smart Technology

The proposed system should produce no undue vibration, no undue noise, no dust or mold, and no excess moisture that could damage historic buildings or users. Therefore the system to be installed should be energy efficient having a minimal impact that harms the users or the environment.

7. Recommendations

In this chapter the recommendations are formed to inform decisions based on the Heritage Impact Assessment of the proposed HVAC (Ancillary Structures) project in the WHS, Capitol Complex, Chandigarh.

The WHS Capitol Complex is part of the unique transnational serial property that was chosen based on the fact that the 17 sites together represent outstanding universal values under the OUV criteria (i), (ii), and (vi). While keeping in mind the attributes and values of the Capitol complex site, the recommendations are made to protect the OUV of the site which is irreplaceable.

As analysed the HVAC (Ancillary Structures) project will not have any major negative impacts on OUV of WHS, Capitol Complex, Chandigarh. However, the proposed actions are causing moderate negative impacts which can be avoided with the recommended mitigation measures. **Therefore, it is recommended to proceed with the HVAC project for Secretariat Building in the WHS of the Capitol Complex with the following to be done before, after and during the proposed project.**

- It is recommended to record climatic data as per current building use, so that mitigation measures can be worked out prior to execution of the project.
- It is recommended that during the construction of two structures and the interventions in the built fabric, proper documentation and supervision be maintained at each step and signed off by the authorities or experts.
- The proposed project is located within the core zone and will be integrated in the Secretariat building. It is recommended to prepare guidelines for preventive measures for periodic monitoring and maintenance of the heritage building to oversee after the project has been implemented.
- During the dismantling of the structures careful monitoring to be provided.
- During the installation of new systems, the older conduits and spaces to be utilised as much as possible.
- The mitigation measures should be incorporated into the management plan before proceeding and proposing any further changes to the Capitol Complex.
- The recommended technical investigations need to be followed even before planning any further action for implementation.

8. Follow-up

This chapter summarizes follow-up actions to be taken up based on the recommended mitigation measures. The following table presents the recommended activities that need to happen and the responsible stakeholder to be involved.

Table 6 : Follow- up Activity

Activity	What needs to happen?	Who is responsible?
Climate Monitoring	Micro climate and Macro Climate Monitoring is required	Chandigarh Administration
Documentation and supervision of Heritage building	Investigation of all historic Elements/Checklist of the interventions	Chandigarh Administration
Preventive measures Guidelines	Based on the heritage building assessment preparation on **Preventive measures Guidelines** to avoid threats from moisture, mold growth, biodegradation and surface staining.	Chandigarh Administration
Monitoring of plumbing and electrical systems	Regular maintenance and monitoring to prevent health and safety hazards	Chandigarh Administration
Incorporation of mitigation measures in Planning & management of Site	Site management plan with mitigation measures	Chandigarh Administration

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"Urban Planning." Accessed October 2, 2022. https://urbanplanning.chd.gov.in/index.php/home/page/20.

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10. Annexure

1. CHCC Approval letter for the HVAC (Ancillary Structures), 2020
2. HVAC (Proposal drawings)
3. Technical Experts Consultation for HVAC with HIA team

Annexure 1
CHCC approval for
HVAC (Ancillary Structures)

Design.

It has reported to the following work of PITC and handing over of Central Air Conditioning System (HVAC) of the said building.

1. Outdoor units of split ac and the window ac provided in the Punjab Secretariat Building, Sector-1, Chandigarh. De-Facing the Heritage status of the Punjab Secretariat Building, Sector-1, Chandigarh.
2. The chilled water pipe will run through the PHS duct.
3. Proposed Central Air Conditioning plant with 2x 300 TR chilling machine.
4. The space for Air Conditioning plant will be provided adjoining the existing fire fighting plant in the Punjab Secretariat Building, Sector-1, Chandigarh.

Funds:- The funds to the tune of Rs. 531.38 Lacs shall be arranged by the Chandigarh administration Chandigarh under the head of 4217 C.O. – Urban Development Infrastructure.

Executive Engineer,
P. H. Division No. 8,
Chandigarh.

ABHA NARAIN LAMBAH ASSOCIATES
CONSERVATION ARCHITECTS
301 B-Wing Amrit 15, Carter Road,
Kh / West MUMBAI-400 052
Ph. 26055756 Telefax - 26045667

Design:-

It has reported to the following work of PITC and handing over of Central Air Conditioning System (HVAC) of the said building.

1. Outdoor units of Split A.C. and the Window A.C. provided in the Haryana Secretariat Building, Sector-1, Chandigarh. De-Facing the Heritage status of the Haryana Secretariat Building, Sector-1, Chandigarh.
2. The chilled water pipe will run through the PHS duct.
3. Proposed Central Air Conditioning plant with 300 TR chilling machine.
4. The space for Air Conditioning plant will be provided adjoining the existing fire fighting plant in the Haryana Secretariat Building, Sector-1, Chandigarh.

Funds:- The funds to the tune of Rs. 328.32 Lacs shall be arranged by the Chandigarh administration Chandigarh under the head of 4217 C.O. – Urban Development Infrastructure.

Executive Engineer,
P. H. Division No. 8,
Chandigarh.

PRINCIPAL
C.C.A.
Diary No. 642
Dated 7/2/2020
Sr.A/E ( )/A/S/Lib.

Supdt.-I

From

The Senior Architect-cum-
Member Convener,
CHCC Sub-Committee,
Department of Urban Planning
Chandigarh Administration

To

1) Sh. S.D.Sharma,
Consultant Architect-cum- Member, CHCC,
Chairman of Sub Committee,
54/1, Swastic Vihar, Mansa Devi Complex, Panchkula.

2) The Chief Engineer-cum-Special Secretary (Engg.),
UT, Chandigarh.

13 3) Prof. Rajnish Wattas
Former Principal, CCA-cum-Member CHCC & Sub Committee of CHCC,
H.No. 72, Sector-28-A, Chandigarh.

4) Dr. B.N.Goswamy
Art Historian/ Member, CHCC
H.No. 171, Sector-19A, Chandigarh.

5) The Principal,
Chandigarh College of Architecture,
Sector-12, Chandigarh.

Memo. No. -Arch-2020/ 1108
Dated Chandigarh, the 5-2-2020

Subject: **Minutes of the onsite meeting of the Sub Committee of Chandigarh Heritage Conservation Committee held on 23.01.2020 at 11:00 AM under the Chairmanship of Sh. S.D.Sharma, Consultant Architect-cum- Member, CHCC-cum-Chairman of Sub Committee at Capitol Complex for the Assessment of the Restoration Works in the Assembly Building.**

Enclosed please find herewith duly approved minutes of the CHCC Sub Committee onsite meeting held on 23.01.2020 under the Chairmanship of Sh. S.D.Sharma, Consultant Architect-cum-Chairman of Sub Committee of CHCC at Capitol Complex for the Assessment of the Restoration Works in the Assembly Building for kind information and for taking further necessary action.

Senior Architect-cum- Member Convener,
CHCC Sub Committee
Department of Urban Planning,
Chandigarh Administration

D/A: As above

Endst. No. -Arch-2020/ Dated:

A copy of the approved minutes as above is forwarded to the following for information and taking further necessary action:-

1. PA to CA for the kind information of the Chief Architect, UT, Chandigarh.
2. The Superintending Engineer, Const. Circle-II, UT, Chandigarh.
3. The Superintending Engineer, P.H.Circle, UT, Chandigarh.
4. The Superintending Engineer, Electrical Circle, UT, Chandigarh.
5. Sh. Shams S.Shaikh, Senior Architect, Department of Urban Planning, UT, Chandigarh.
6. The Executive Engineer, C.P.Divn.No.6, UT, Chandigarh.
7. The Executive Engineer, P.H.Divn.No.8, UT, Chandigarh.
8. The Executive Engineer, Electrical Divn.No.3, UT, Chandigarh.
9. Ms. Daminder Virdi, Assistant Architect, Department of Urban Planning, UT, Chandigarh.
10. Sh. Arman Singh, Sub Divisional Engineer, Const. Sub Divn.No.9, UT, Chandigarh.
11. Ms. Gagandeep Kaur Dhillon, Assistant Architect, Department of Urban Planning, UT, Chandigarh.

Subject:- **Minutes of the onsite meeting of the Sub Committee of Chandigarh Heritage Conservation Committee held on 23.01.2020 at 11:00 AM under the Chairmanship of Sh. S.D.Sharma, Consultant Architect-cum- Member, CHCC-cum-Chairman of Sub Committee at Capitol Complex for the Assessment of the Restoration Works in the Assembly Building.**

The following were present:-

1. Sh. S.D.Sharma, Consultant Architect-cum- Member, CHCC, Chairman of Sub Committee,	Chairman
2. Prof. Rajnish Wattas Former Principal, CCA-cum-Member, CHCC	Member
3. The Chief Architect UT, Chandigarh.	Invitee
4. Mr. Gaurav Gangwar Assistant Professor Chandigarh College of Architecture, Sector-12, Chandigarh.	On behalf of Principal, CCA
5. The Superintending Engineer, P.H.Circle, UT, Chandigarh.	Invitee
6. Sh. Rajiv Mehta Senior Architect Department of Urban Planning, UT, Chandigarh.	Member convener
7. Sh. Shams S.Shaikh Senior Architect Department of Urban Planning, UT, Chandigarh.	Invitee
8. The Executive Engineer, C.P.Divn.No.6 UT, Chandigarh.	Invitee
9. The Executive Engineer, P.H.Divn.No.8 UT, Chandigarh.	Invitee
10. The Executive Engineer, Electrical Divn.No.3, UT, Chandigarh	Invitee
11. Ms. Daminder Virdi Architect Department of Urban Planning, UT, Chandigarh.	Invitee
12. Sh. Arman Singh Sub Divisional Engineer Const. Sub Divn.No.9, UT, Chandigarh	Invitee
13. Mrs. Gagandeep Kaur Dhillon Assistant Architect Department of Urban Planning, UT, Chandigarh.	Invitee

The committee members along with the officers/ officials of the Engineering Department and the Department of Urban Planning visited the Assembly Building at the Capitol Complex for assessment of the restoration works wherein the following issues were discussed and observations made:-

On the request of the Engineering Department, the following additional items were also discussed and decisions taken:-

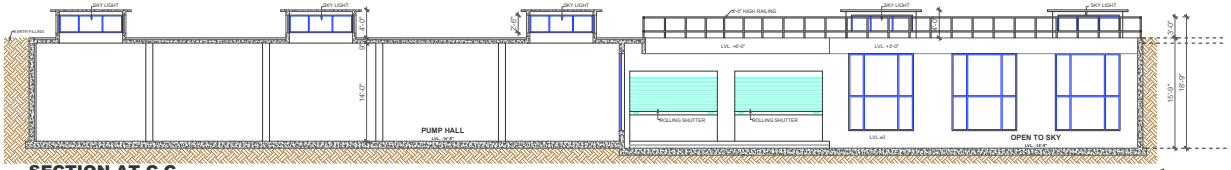
1. It was apprised by the concerned official of the Engineering Department that a request has been received from the Punjab Government for providing off white terrazzo flooring instead of

black terrazzo for the corridors as the black floor will make the corridors look darker. The committee decided that the same may be allowed in view of the above mentioned reason.

2. The Superintending Engineer, Project Public Health Circle presented a drawing showing the locations of the proposed underground AC Plant Room (60' x 100') for the Secretariat building at the back side of the Secretariat Building, the proposed open-to-sky sunken area for the Cooling towers (40' x 50') for the Secretariat building near the entry gate for the Assembly Building and the proposed open-to-sky sunken area for the Cooling towers (20' x 60') for the Assembly building near the hillock. Further, it was apprised by the concerned XEN of the Electrical Wing that an underground Sub-Station (30' x 60') shall also be required adjacent to the AC Plant Room. The committee members visited the proposed locations as above to assess their visual impact. After due deliberations, it was decided that the proposed locations at site as marked 'A' on plan may be allowed, subject to the condition that they are suitably concealed with landscaping so that they do not compromise the views and the surroundings of these important heritage buildings.

The meeting ended with a vote of thanks to the Chair.

Annexure 2
HVAC (Ancillary Structures)
Drawings and Document



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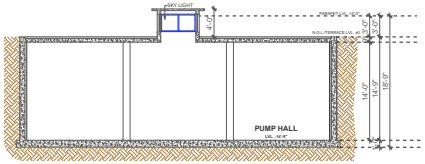

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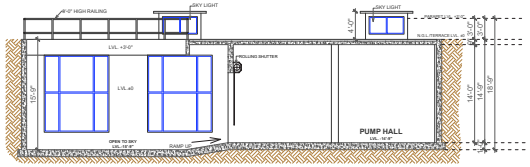

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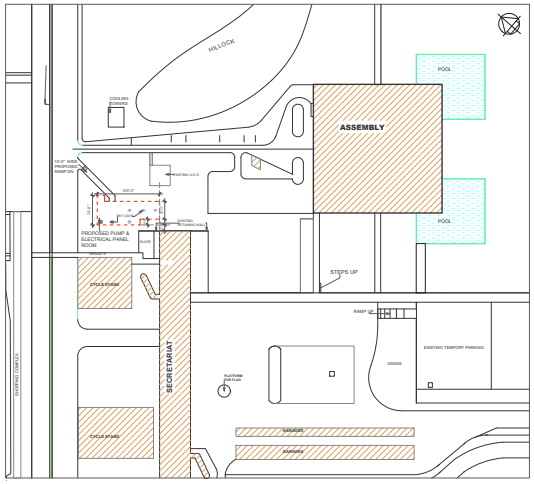
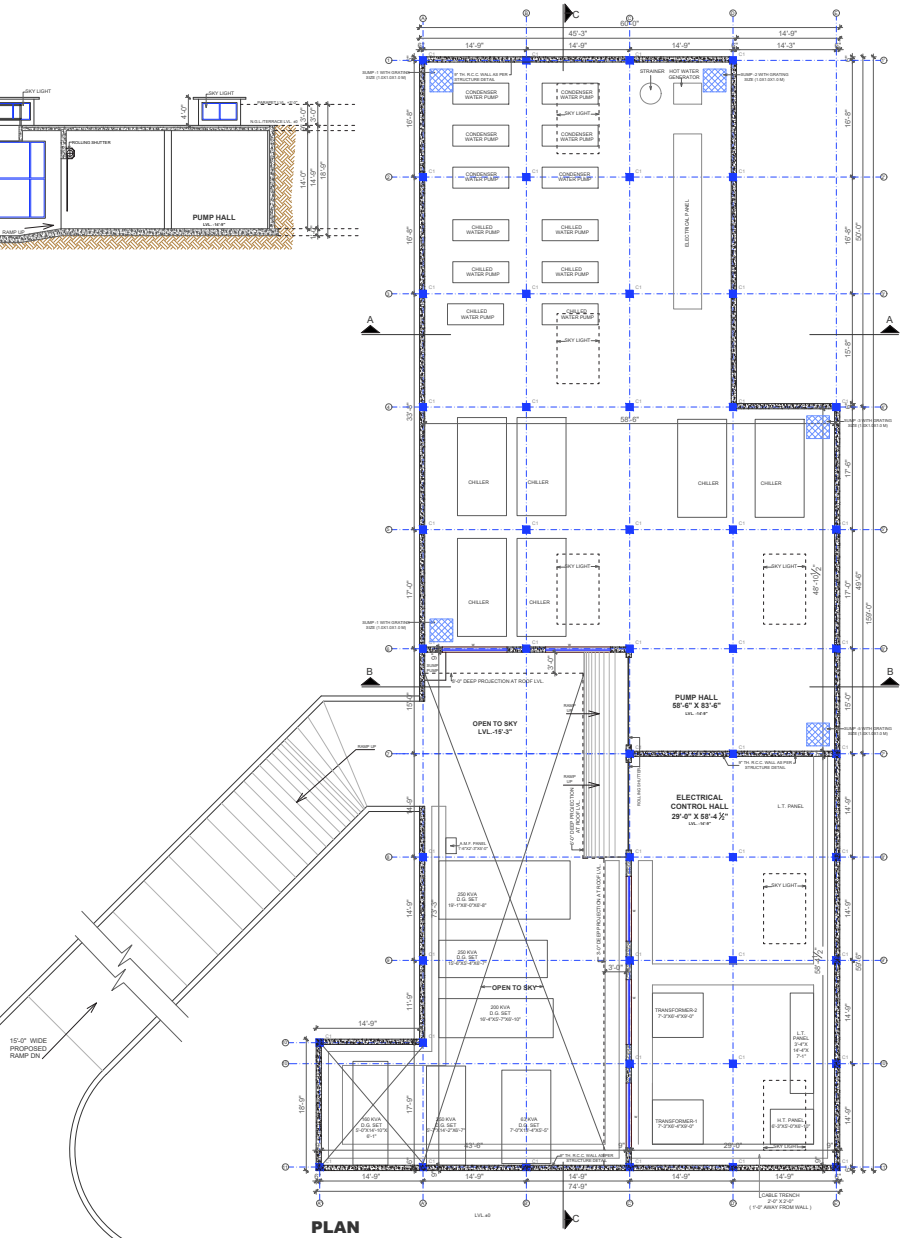
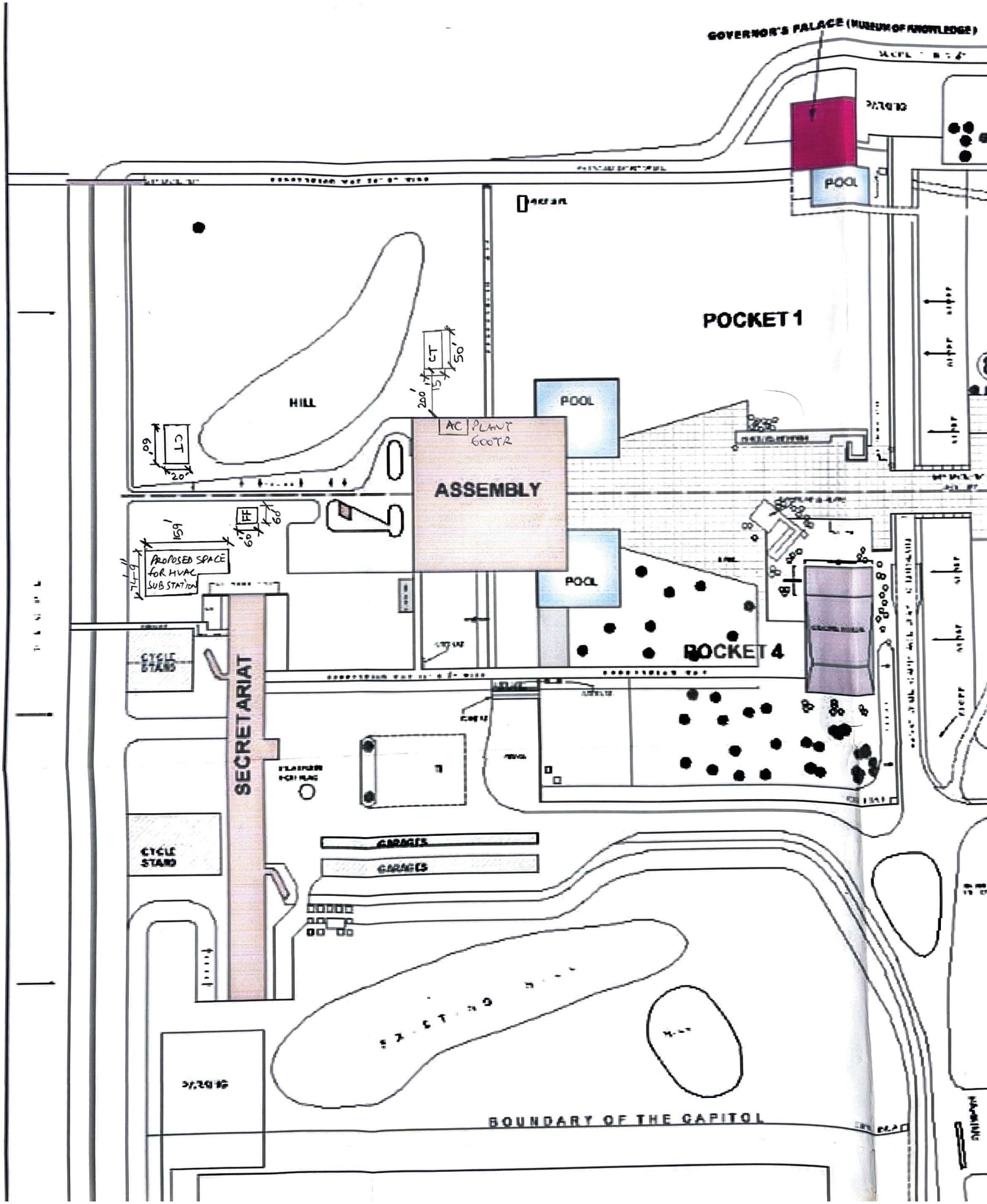


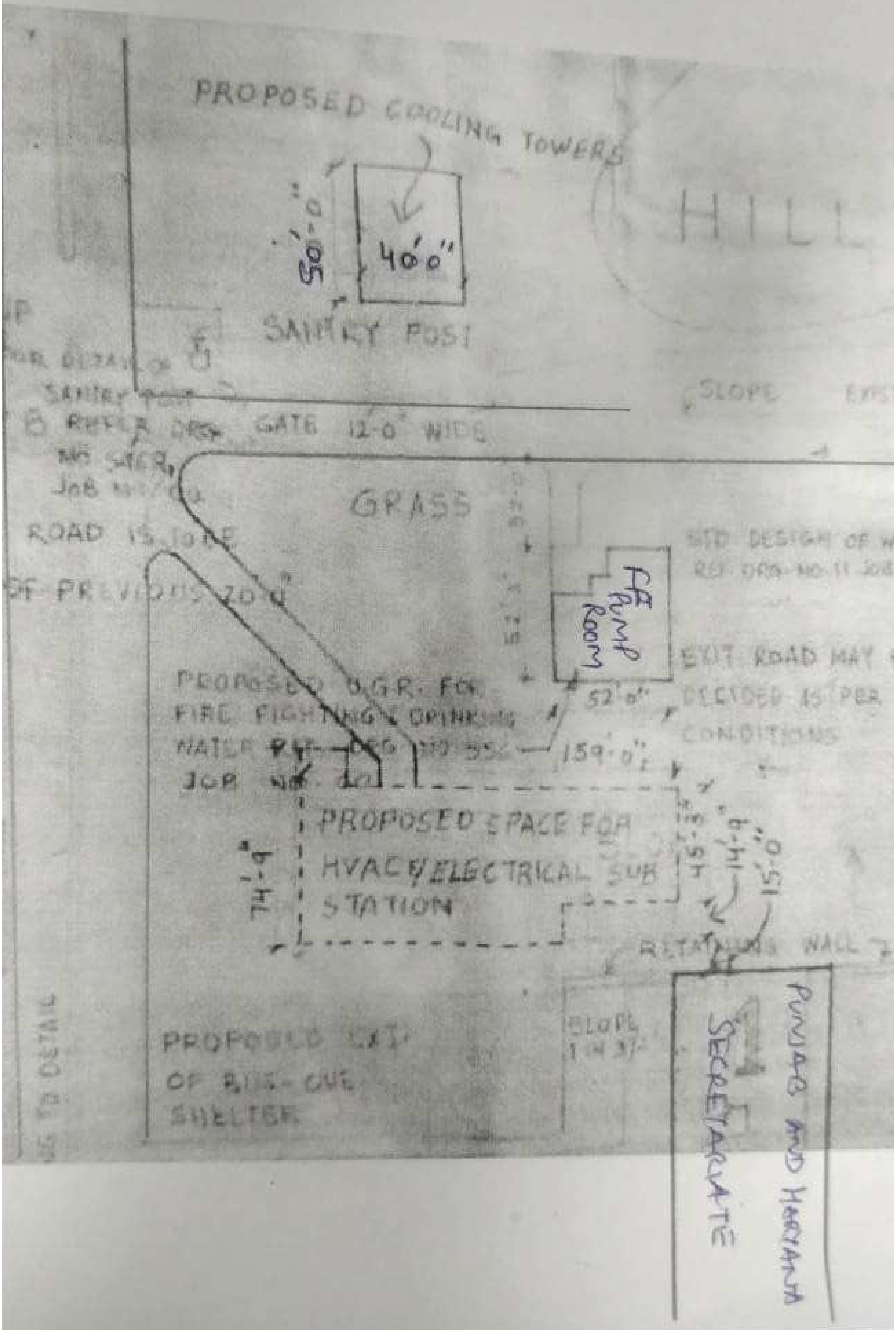
KEY PLAN (REFER DRG. NO.522R OF JOB NO. 60 FOR LOCATION OF AC PLANT ROOM AND ELECTRIC SUBSTATION (SUB- TERRANEAN)



PLAN


GOVERNOR'S PALACE (MUSEUM OF KNOWLEDGE)
POOL
POCKET 1
HILL
CT
60'
20'
200'
15'
50'
AC PLANT
600TR
ASSEMBLY
POOL
FF
60'
60'
159'
PROPOSED SPACE FOR HVAC SUB STATION
POOL
POCKET 4
CYCLE STAND
SECRETARIAT
CYCLE STAND
GARAGES
GARAGES
BOUNDARY OF THE CAPITOL

ROCK GARDEN
CANAL
TOURIST INFORMATION CENTER
MULTI LEVEL PARKING
POCKET 3
POCKET 2
PIAZZA
AC PLANT
2400 T.R.


PROPOSED COOLING TOWERS
50'-0"
40'0"
HILL
SANTRY POST
SLOPE
GATE 12-0" WIDE
GRASS
FF PUMP ROOM
52'0"
CONDITIONS
159'-0"
PROPOSED O.G.R. FOR
FIRE FIGHTING
PROPOSED SPACE FOR
HVAC & ELECTRICAL SUB
STATION
74'-0"
RETAINING WALL
SLOPE
SHELTER
PUNJAB AND HARYANA
SECRETARIATE

PRESENTATION ON
PROPOSED UNDER GROUND
SUB STATION FOR A.C. PLANT ROOM

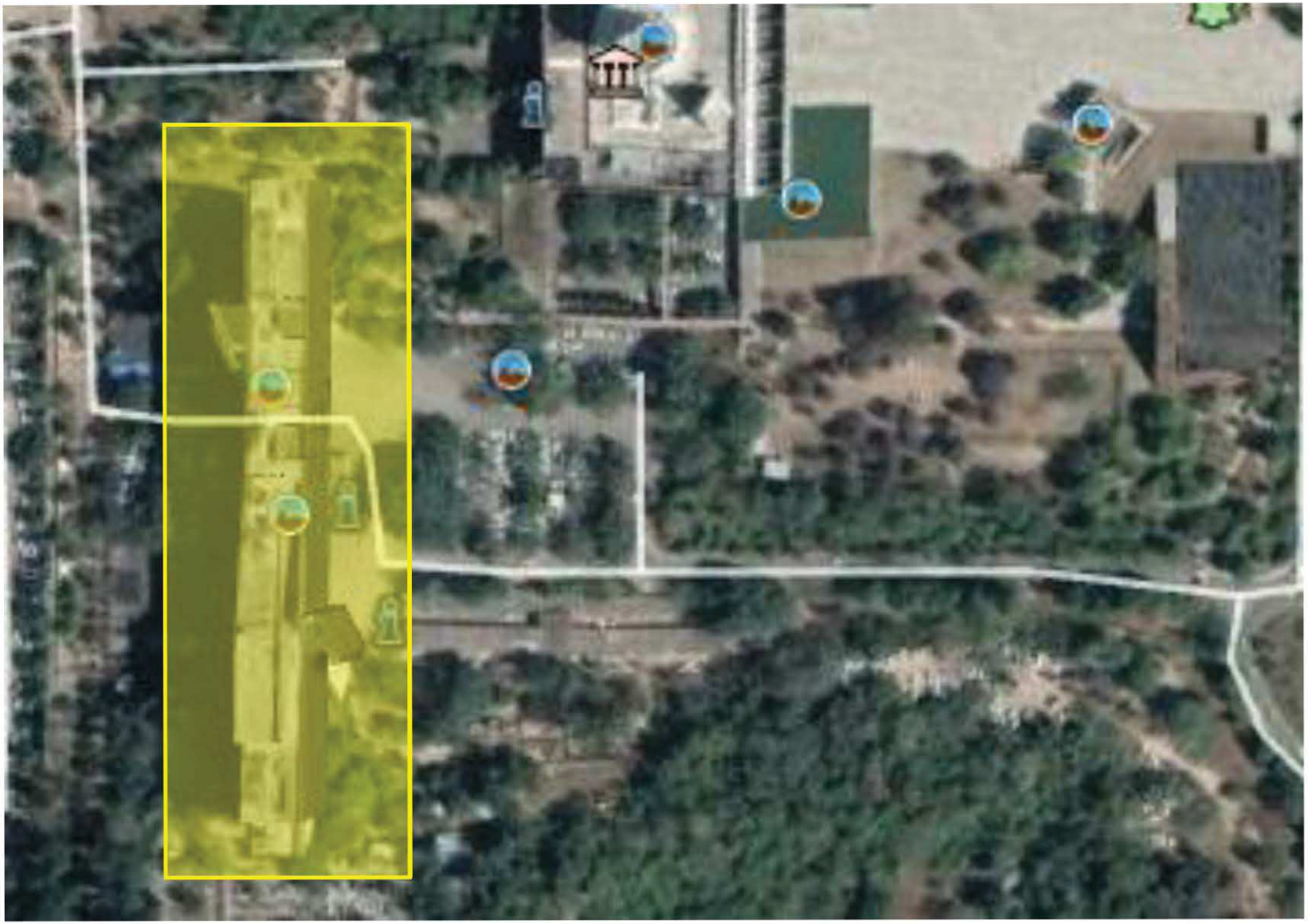
PUNJAB AND HARYANA CIVIL
SECRETARIAT CHANDIGARH

PUNJAB AND HARYANA CIVIL SECRETARIAT

CHANDIGARH

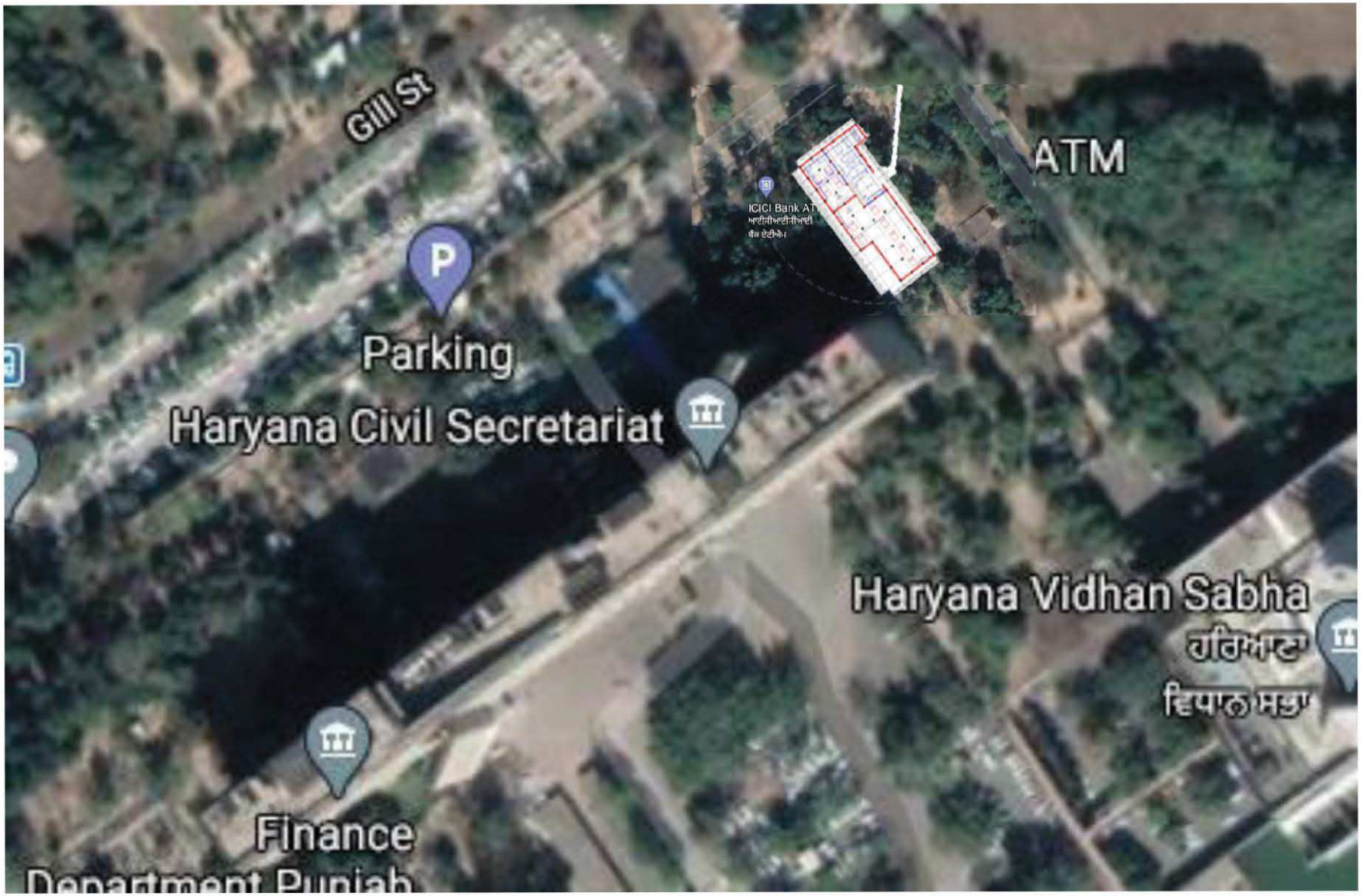
PUNJAB & HARYANA CIVIL SECRETARIAT

PUNJAB & HARYANA CIVIL SECRETARIAT

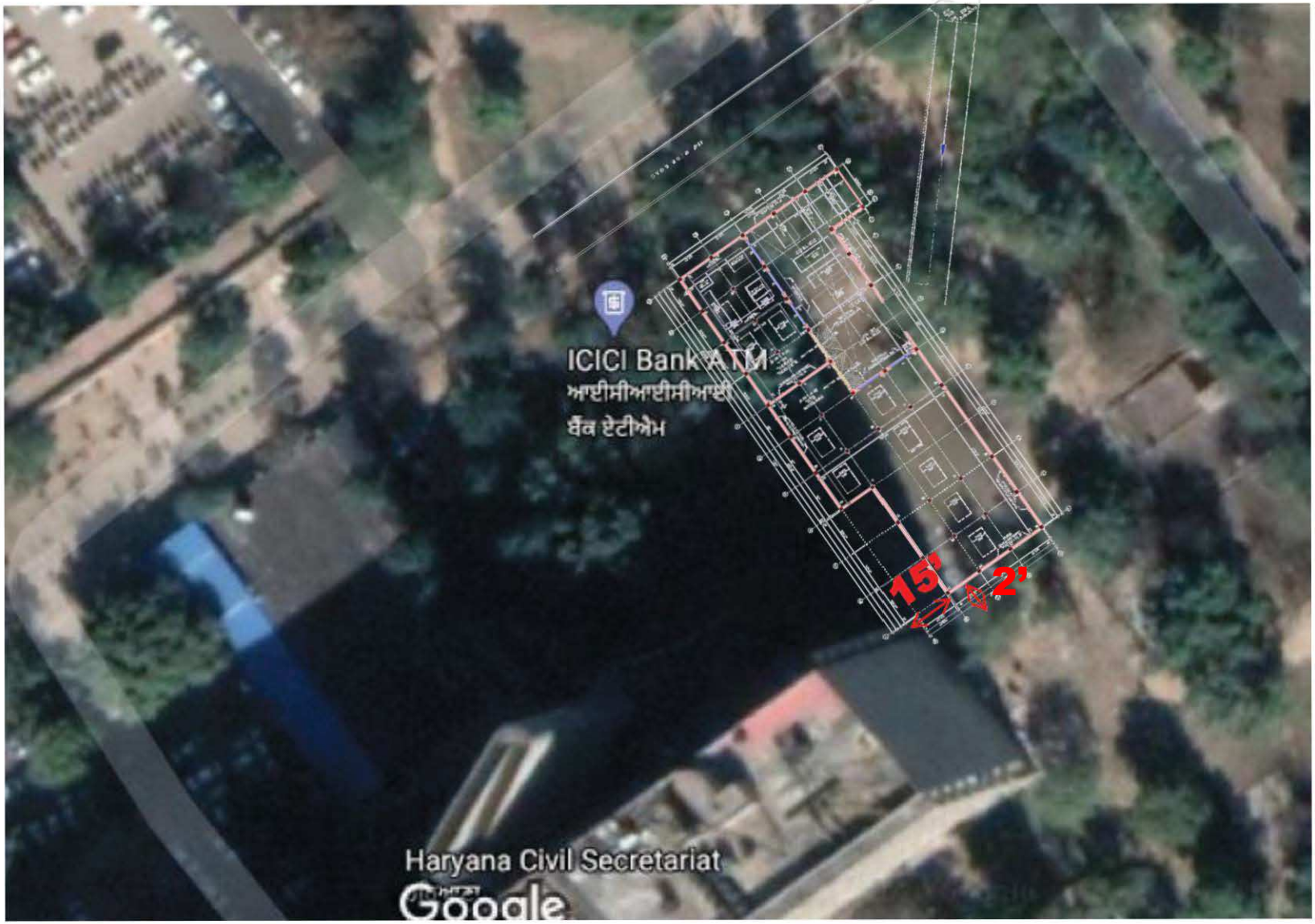


SITE AND GOOGLE PICTURES OF CIVIL SECRETARIAT

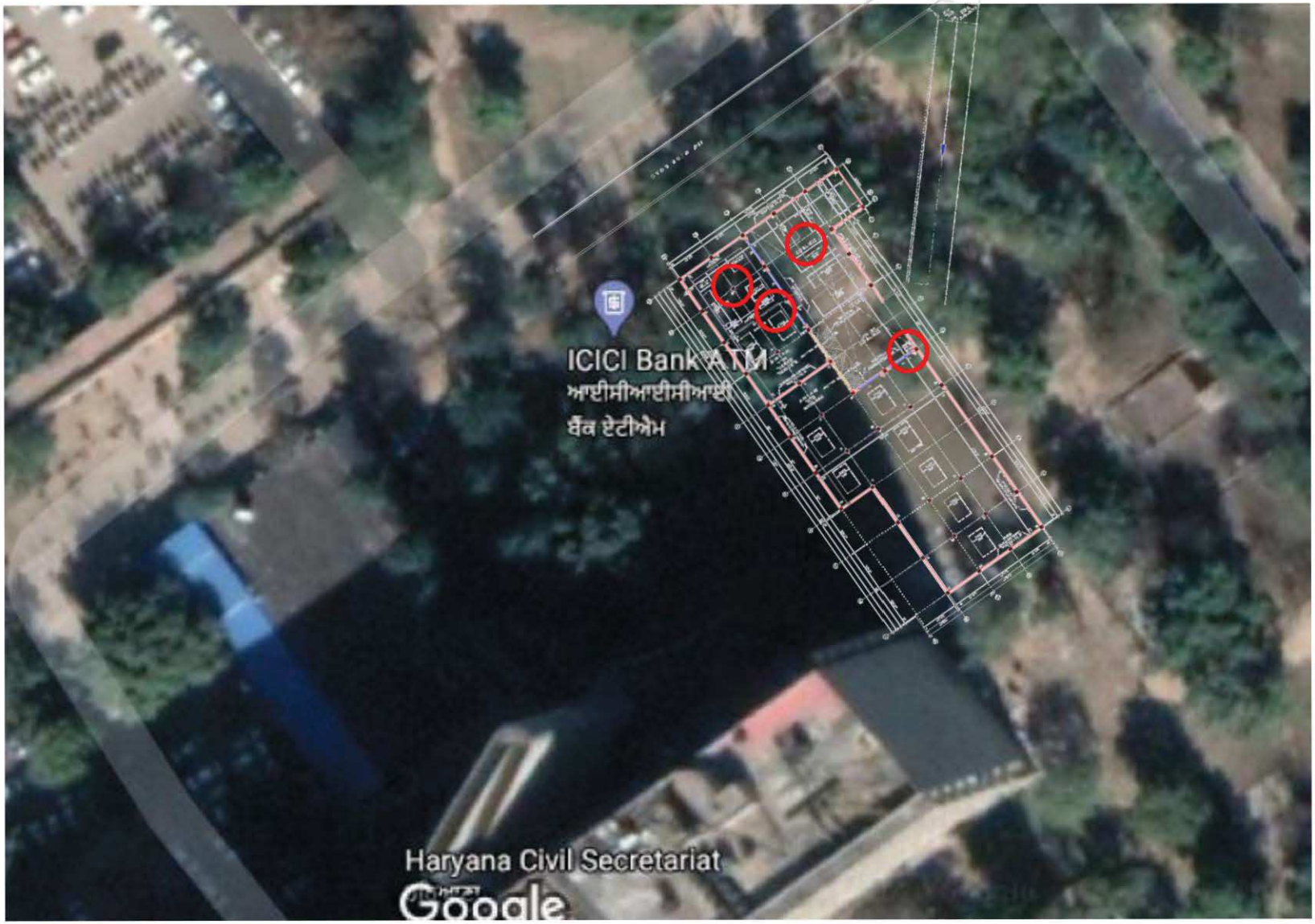
SITE LOCATION OF PROPOSED UNDER GROUND SUB-STATION SPACE



DISTANCE OF PROPOSED SITE FROM THE EXISTING BUILDING

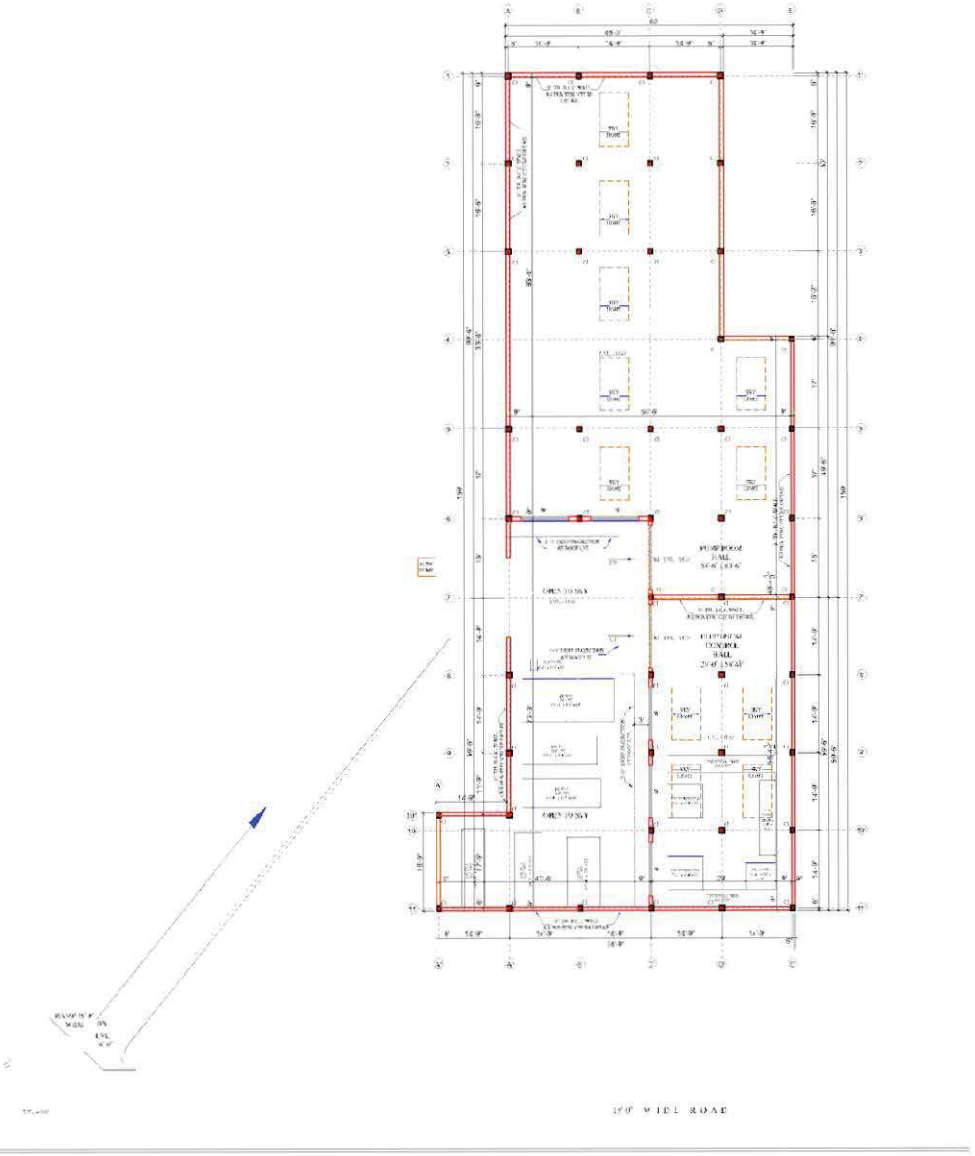


TREES WHICH ARE COMING IN BUILDING LINE

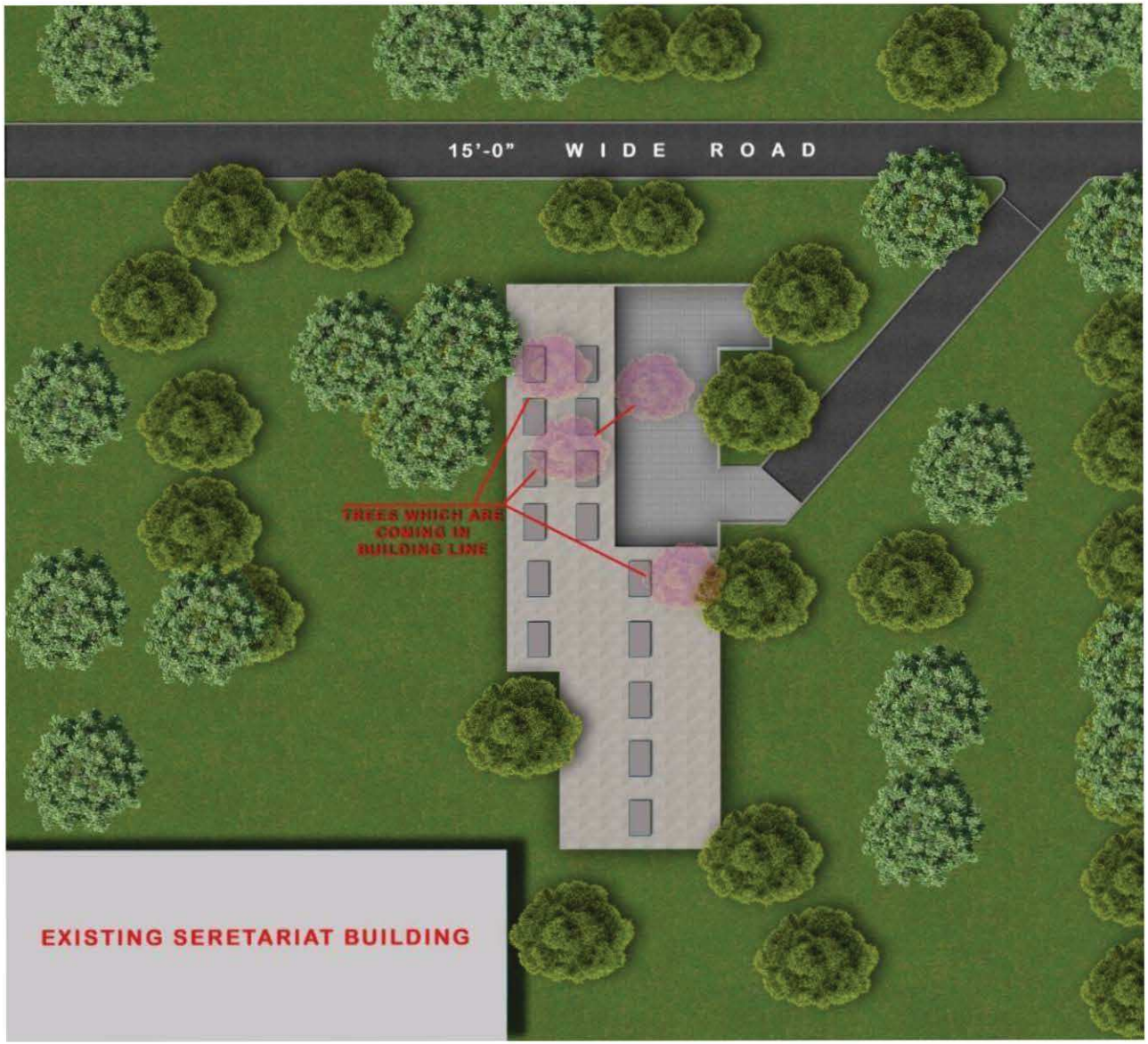


TREES WHICH ARE COMING IN BUILDING LINE

PROPOSED PLAN (PUMP AND ELECTRICAL PANEL ROOM)



PROPOSED PLAN (PUMP AND ELECTRICAL PANEL ROOM)



SITE PHOTOGRAPH

Chiller Plant

Annexure 3

Technical Experts Consultation for HVAC (Ancillary Structures)

Heritage Impact Assessment (HIA), HVAC (Ancillary structures) for Capitol Complex, Chandigarh

Technical Expert's Consultation on the proposed interventions of HVAC (Ancillary structures)
Date : 20 October 2022
Location : Capitol Complex, Chandigarh

On 20 October 2022, a Site visit and meeting took place with the technical experts and stakeholders from Chandigarh administration. The primary agenda was to discuss the proposed interventions of HVAC (Ancillary Structures) in the Capitol complex. The members of Engineering department, Department of Planning and Public health department were present.

After the meeting the HIA team along with concerned engineers visited the Capitol Complex site. During the visit the existing HVAC plants and proposed site of HVAC for the Secretariat building was inspected.

The attached document includes the list of queries that were raised based on the baseline data provided to carry out the heritage impact assessment along with responses received from the technical experts from Public health wing and Engineering Department.

In this document, queries are raised over the proposed interventions of HVAC ancillary structures in Capitol Complex (Image 1) concerning the Heritage Impact assessment. The necessary design & construction details, equipment sizes, space requirements, material, and finishes specifications will be required to carry out the HIA for the proposed HVAC (Ancillary structures).

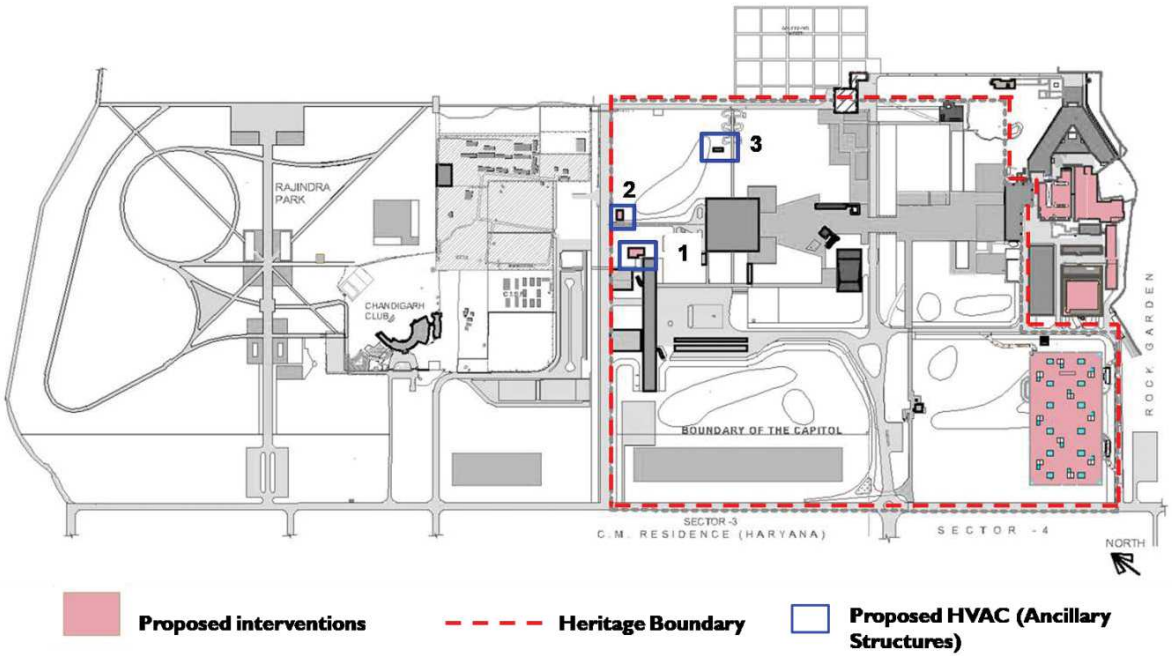
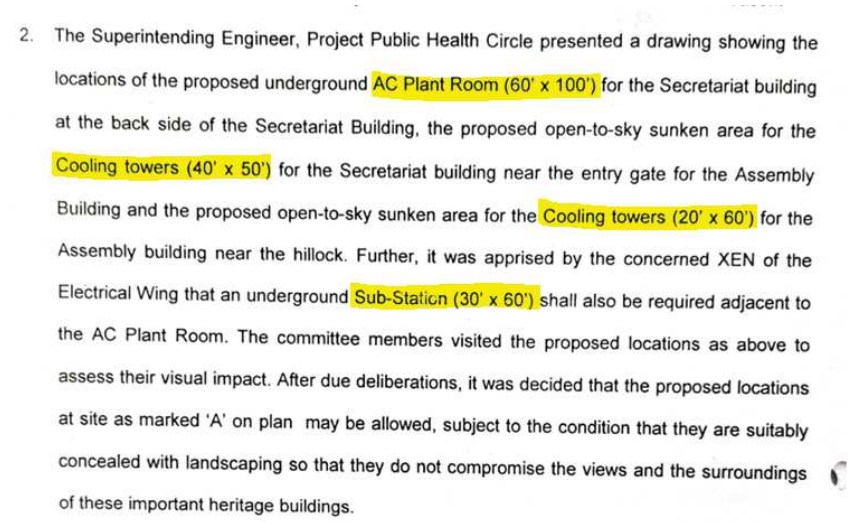


Image 1: Site plan showing the proposed intervention in the Capitol Complex, WHS, © Chandigarh College of Architecture

According to the plan (Image 1), there are three small structures proposed for the HVAC ancillary structures.

1. AC Plant Room (60'X100')
2. Cooling tower 1 (40'X50')
3. Cooling Tower 2 (20' X 50')



2. The Superintending Engineer, Project Public Health Circle presented a drawing showing the locations of the proposed underground AC Plant Room (60' x 100') for the Secretariat building at the back side of the Secretariat Building, the proposed open-to-sky sunken area for the Cooling towers (40' x 50') for the Secretariat building near the entry gate for the Assembly Building and the proposed open-to-sky sunken area for the Cooling towers (20' x 60') for the Assembly building near the hillock. Further, it was apprised by the concerned XEN of the Electrical Wing that an underground Sub-Station (30' x 60') shall also be required adjacent to the AC Plant Room. The committee members visited the proposed locations as above to assess their visual impact. After due deliberations, it was decided that the proposed locations at site as marked 'A' on plan may be allowed, subject to the condition that they are suitably concealed with landscaping so that they do not compromise the views and the surroundings of these important heritage buildings.

Image 2: Extract from the SOC, 2020, Annex E CHCC approval for HVAC ancillary Structures, © SOC, 2020

In (Image 2) it is mentioned that **"an underground Sub station (30'X60') shall also be required adjacent to the AC plant room"**. The location of the underground Sub station is not included in the given plan.

1. What is the precise location of an underground Sub station (30'X60')?
   Response : The location of the underground AC plant room substation is towards the Haryana side of the Punjab and Haryana Civil Secretariat near firefighting plant room.

2. What are the actual heating, ventilating, and cooling needs for each heritage building, its occupants, and its components? What methods have been used to calculate the requirements?
   Response : The necessity of providing HVAC system in Heritage building has arisen due to the need of replacement of existing window/split/ductable air conditioners which give bad look to the façade of the building. The heat load calculation is done for the whole building to calculate its requirement.

3. What are the details such as capacity, tonnage, pipe sizes, ductwork etc.?
   Response : The capacity of HVAC system for the Punjab and Haryana Civil Secretariat is 1800TR, the pipe sizes and duct sizes are calculated on the requirement basis for different levels and areas.

4. How the proposed HVAC system will be installed? What are the details of distribution system, control devices, generating equipment and accessories such as filtration, and humidification?
   Response : The main plant of HVAC system will be installed on the Haryana Side of Punjab and Haryana Civil Secretariat near firefighting room where the various equipment such as chilling machines, condenser pumps, primary chilled water pumps, secondary chilled water pumps, electrical panels etc. will be installed in the proposed plant room.

5. What it will look like in terms of aesthetics?
   Response : There will be no change in the aesthetics of the building due to the HVAC installations.

6. What are the space requirements imposed by the proposed HVAC system in terms of its application within the heritage buildings(High Court, Secretariat and Assembly)?
7. What spaces are available for the equipment and distribution system?
   Response : The plant room is proposed near the Haryana Side of Punjab and Haryana Civil Secretariat and all the equipment/services will be installed above the false ceiling in the building.

8. Is it a reversible intervention? What is the expected life span of the proposed HVAC system and its future replacement?
   Response : No. The expected life span of proposed HVAC system is 20 years.

9. Are there any expected damage to historic materials (Such as drilling, chasing or alteration to the original walls (exterior or interior), roof and flooring?
   Response : There shall be no damage to historic materials. The equipment/services shall be laid above the false ceiling.

10. How visible the new HVAC system will be within the Capitol Complex Site and heritage buildings? Can it be hidden or camouflaged to preserve the authenticity and integrity of the historic site layout?
    Response : The HVAC system will be installed underground near the Haryana Side of Punjab and Haryana Civil Secretariat and it will be camouflaged as per the requirement at site.

HERITAGE IMPACT ASSESSMENT

HERITAGE IMPACT ASSESSMENT (HIA) REPORT ON
MULTI-LEVEL UNDERGROUND PARKING PROJECT IN

CAPITOL COMPLEX (WHS), CHANDIGARH

OCTOBER 2022

HERITAGE IMPACT ASSESSMENT

Draft Report

October, 2022

HERITAGE IMPACT ASSESSMENT (HIA) REPORT ON
MULTI-LEVEL UNDERGROUND PARKING PROJECT IN

CAPITOL COMPLEX (WHS), CHANDIGARH

Prepared for:
Engineering Department,
Union Territory, Chandigarh

In consultation with
Chandigarh College of Architecture (CCA)

Prepared by:
Bhawna Dandona (Conservation Architect)
Bhavya Ahuja (Conservation Architect)

Table of Contents

Executive Summary

The Heritage Impact Assessment report is prepared to assess the proposed Multi-level underground parking in the World Heritage Site (WHS) of the Capitol Complex, Chandigarh, India. It is a stand-alone report commissioned by the Engineering department, Chandigarh Administration based on the request made by the World Heritage Committee. The assessment is carried out by the conservation architects, Bhawna Dandona and Bhavya Ahuja with the support of Chandigarh College of Architecture.

The report has been prepared to inform decisions to managing authorities keeping in mind to protect the Outstanding Universal Value (OUV) of the WHS Capitol Complex as part of the unique **transnational serial property of *The Architectural Work of Le Corbusier*.** The purpose of this assessment is to evaluate the proposed development in terms of its potential impacts on the existing resources included in the core and buffer zones of the World Heritage Site of the Capitol Complex, Chandigarh.

The methodology is based on the resource manual, Guidance and Toolkit for Impact Assessment in a World Heritage context by UNESCO, ICCROM, ICOMOS, and IUCN. The background information and baseline assessment data sets the context of the WH Site Capitol Complex to assess the foreseeing impacts of future developments. In addition, the assessment includes valuable inputs from key stakeholders.

The results of the assessment show that in order to avoid the very serious negative impacts on the OUV of the WHS, it is best to avoid the multi-level underground parking project that is proposed within the core zone of the inscribed property. Before planning any future actions, it is recommended to take into consideration the mitigation measures suggested in this report especially to address the recurring and long-term issues of traffic planning and parking.

Finally, the Heritage Impact Assessment report is assessing the impacts of only multi-level underground parking whereas there are two more proposals for the development of the High Court extension building and HVAC ancillary structures. It is suggested that all three proposals should be considered jointly to evaluate their collective impacts on the WHS.

Acknowledgments

The Heritage impact assessment report for the proposed Multi-level parking project was made possible with the support of the Engineering department and Department of urban planning, U.T., Chandigarh.

We thank Dr. Arman Singh (Sub Divisional Engineer, Engineering Department, Chandigarh Administration) for his support and for sharing important details during our site visit to the Capitol Complex.

We would like to thank the Chief Architect, Kapil Setia (Department of Urban Planning U.T. Chandigarh Administration) for providing us with the data to carry out the impact assessment and for sharing the perspectives on the current issues of the site. We would like to extend our gratitude to the staff (Department of Urban Planning U.T. Chandigarh Administration) Mr. Ashwani Sharma and Mr. Rajiv Mehta for providing relevant timely information.

We would like to extend our special thanks to Dr. Sangeeta Bagga, Principal, Chandigarh College of Architecture (CCA) for the generous support provided throughout the assessment. We thank Assistant Prof. Saumya and Assistant Prof. Monica at CCA, for giving their valuable time and inputs during our meetings.

We thank Ms. Benedicte Gandini, Conservation Architect, FLC for her time and inputs.

We would like to extend gratitude to the local stakeholders who participated in the survey carried out through Google form, the assessment benefited from their contribution.

Team

Bhawna Dandona, Conservation Architect
Bhavya Ahuja, Conservation Architect
Mrinalini Singh, Conservation Architect, MDL
Pravalika Neti, Architect, MDL

Abbreviations

CHCC Chandigarh Heritage Conservation Committee

CMP Comprehensive Mobility Plan

ESZ Eco-sensitive Zone

HIA Heritage Impact Assessment

ICCROM International Centre for the Study of the Preservation and Restoration of Cultural Property

ICOMOS International Council on Monuments and Sites

IUCN International Union for Conservation of Nature

OUV Outstanding Universal Value

SOC State of Conservation

SMP Site Management Plan

WHC World Heritage Committee

WHS World Heritage Site

1. Introduction

The Capitol Complex, Chandigarh in India was inscribed in the UNESCO World Heritage List as part of the **transnational serial property** under the title of **"The Architectural Works of Le Corbusier"** which represents an outstanding contribution to the Modern Movement".

Since the inscription, site management plans, and holistic development plan have been prepared which include the proposals for new construction and infrastructural development within the Core zone of the inscribed WH property. However, the UNESCO World Heritage Committee and its advisory non-government organization for World Cultural Heritage Sites ICOMOS expressed concerns that the new projects could jeopardize the integrity of the World Heritage property. Therefore, a decision was made to carry out a Heritage Impact Assessment (HIA) to evaluate the positive and negative effects of the projects on the Outstanding Universal Value (OUV) of the World Heritage Site.

The proposals include the following new projects:

i. Pump and Electrical panel room (HVAC, Ancillary Structures)
ii. Cooling tower (HVAC, Ancillary Structures)
iii. High Court Extension
iv. Multi-level Underground parking

This HIA will only address the impact of Multi-level underground parking proposed within the Core zone of the inscribed property of the Capitol Complex. The independent heritage impact assessment is commissioned by the Chandigarh Administration.

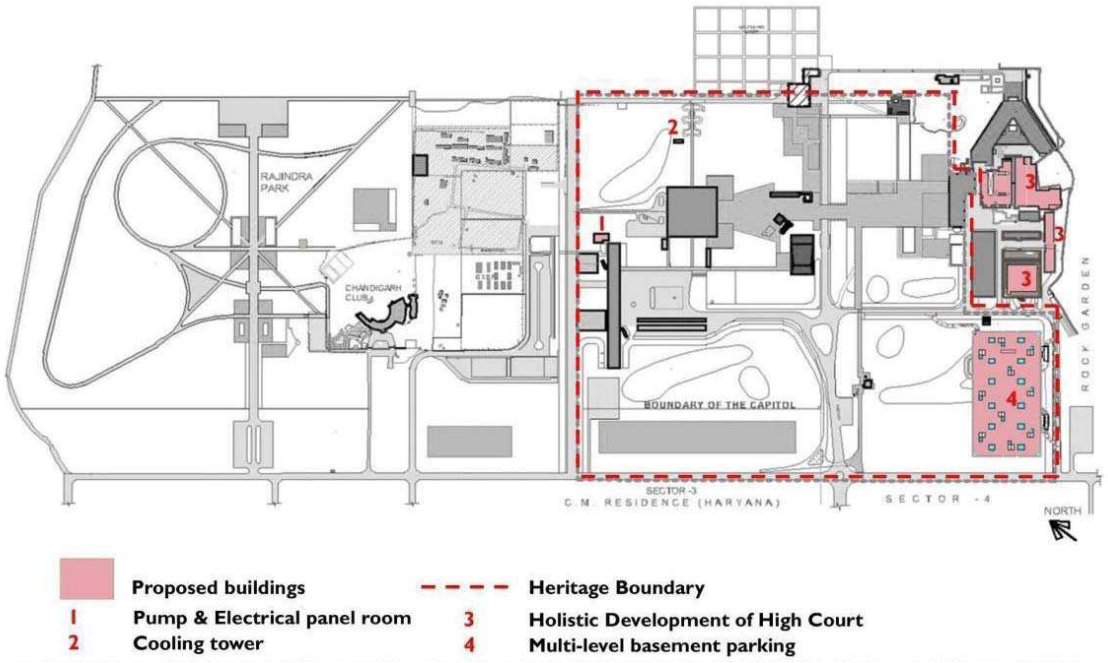


Image 1: Plan of the Capitol complex showing proposed projects © SOC, 2020

1.1 Need for Heritage Impact Assessment (HIA)

The Heritage Impact Assessment is based on decisions adopted at the 42nd and 44th sessions of the World Heritage Committee in 2018 and 2021, and on the following grounds that

1. In 2017, the State Party mentioned the issues of growing uses and functions that need more parking spaces in the capitol complex site. Proper systems and accessibility infrastructure can support the convenience of the visitors. The encroached and overutilized open spaces can't retain the OUV of the site. Multi-level parking is proposed but should strictly correspond to the development guidelines (or sensitivity towards maintaining OUV [1]

2. In response, the World heritage committee (2018) noticed that although impact assessments of individual proposals are undertaken at the level of component sites, Heritage Impact Assessments (HIAs) are not used in line with the ICOMOS Guidance on HIAs for Cultural World Heritage Properties as the impact is only assessed on the components rather than on the whole series, encourages the States Parties to strengthen approaches to impact assessment through using HIAs and through ensuring impacts are considered against the Outstanding Universal Value (OUV) of the series[2]. In 2020, the Chandigarh Administration took into account the ICOMOS Guidance for conducting Heritage Impact Assessments and commits to follow these guidelines for impact assessment while considering future proposals[3]

At 44th extended session of WHC requested "the State Party of India to submit any additional available information on the Heating, Ventilation, and Air-Conditioning (HVAC) Ancillary Structure, the "Holistic development of the Punjab and Haryana High Court" and the multi-level basement parking projects, by 1 February 2022 for review by the Advisory Bodies, and to develop an HIA to assess the potential individual and cumulative impacts of all planned developments within the boundaries and buffer zone of the Capitol Complex, including the multi-level parking structure, and to submit it to the World Heritage Centre for review by the Advisory Bodies along with the project documentation; and also encourages the State Party of India to finalize the Conservation Plan for Chandigarh."[4]

Based on the decisions the Chandigarh Administration is conducting the HIA for the proposed projects.

[1] "State of Conservation Report," 2017.
[2] "UNESCO World Heritage Centre - Decision - 42 COM 7B.18."
[3] "State of Conservation Report," 2020.
[4] "UNESCO World Heritage Centre - Decision - 44 COM 7B.152."

Since the WH inscription in 2016, the new project proposals have been pondered and it has gone under consideration from various authorities. The following timeline is prepared to present the stages of management of the WH site Capitol Complex. The important events are highlighted related to the impact assessment of the proposed multi-level parking project.

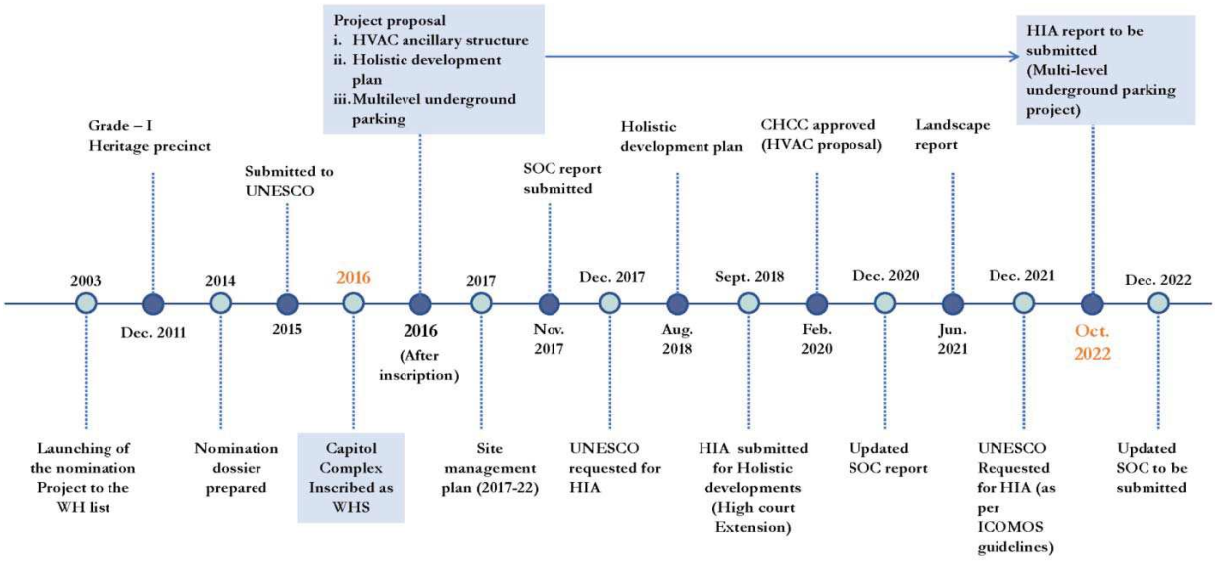


Image 2: Chronology of Events © HIA Team

S.no.	Date	Events
1	2003	Launching of the nomination project to the world heritage list
2	23rd December 2011	Grade I Heritage precinct
3	2014	Nomination dossier prepared
4	2015	Submitted to UNESCO
5	2016	Inscribed as WHS
6	2016 (after inscription)	Project proposal for (Holistic development plan High court extension, multi-level underground parking, and HVAC ancillary structures)
7	2017	Site management plan prepared for five years (2017-2022)
8	Nov, 2017	SOC report Submitted
9	Dec-17	UNESCO requested for HIA
10	Aug 2018	Holistic development plan
11	Sept.,2018	HIA for holistic developments
12	Feb. 2020	CHCC approved the proposal of (HVAC Ancillary Structure)
13	Dec, 2020	Updated SOC Report
14	Dec, 2021	UNESCO requested for HIA as per ICOMOS guidelines
15	June, 2021	Landscape report
16	Oct-22	HIA report to be submitted to Chandigarh administration (Multi-level underground parking project)
17	Dec. 2022	Updated SOC to be Submitted

1.2 Objective of Heritage Impact Assessment (HIA)

The objective of the heritage impact assessment is to preserve and sustain the OUV of the WHS Capitol Complex through sensitive and compatible actions while continuing to develop the site with the utmost care for its future.

The overall objective is to evaluate from an unbiased perspective the effects of the multi-level underground parking project on the OUV of the WH property of the Capitol Complex. In case of negative influences, the plan is to develop recommendations on how to reduce or rectify or avoid such influences.

1.3 Methodology for Heritage Impact Assessment (HIA)

The structure and content of the HIA is built on data collection, archival research, available literature and guidelines, site management plans, and site, and building studies.

The HIA is prepared in accordance with the **Guidance and toolkit for impact assessment** developed by UNESCO and the advisory bodies to the World Heritage Committee, ICCROM, ICOMOS, and IUCN. The guidance was published in 2022. The methodology used for the impact assessment is in line with the Guidance.

The methodology adopted for the Heritage Impact Assessment:

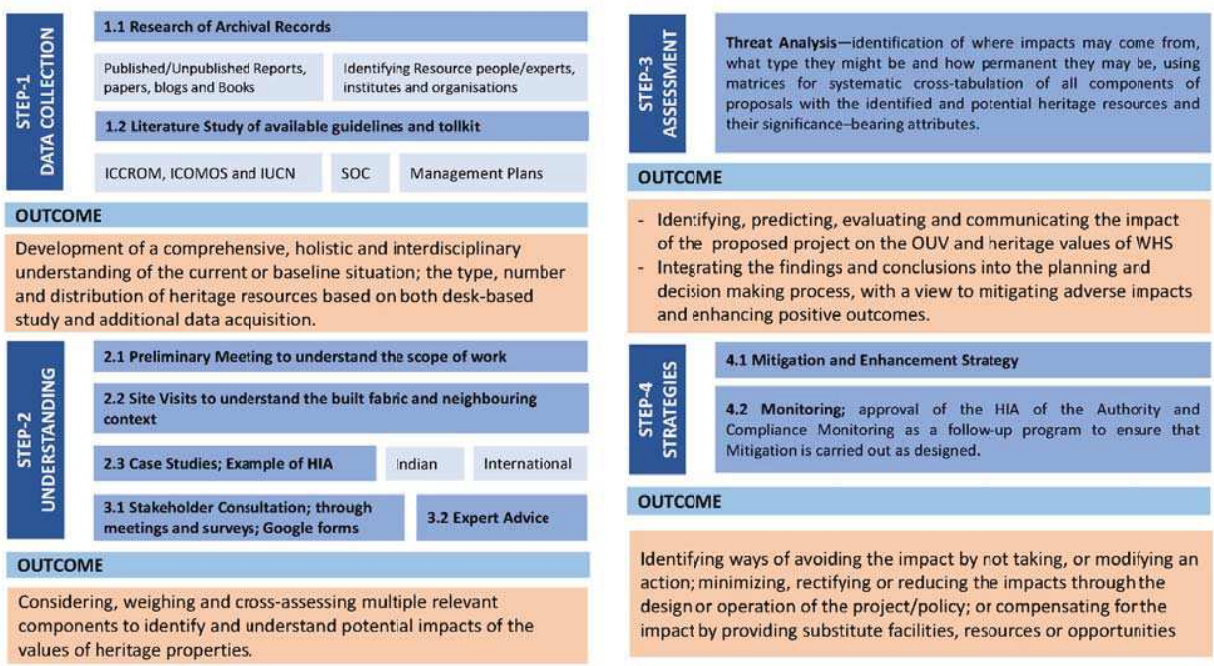


Image 3: Methodology Framework © HIA Team

1.4 Stakeholders

The stakeholders of the WHS Capitol Complex are identified at four levels: international, national, state, and local. The key stakeholders were involved in the assessment starting from the preliminary discussions (representatives of the Chandigarh administration, Chandigarh College of Architecture, and locals).

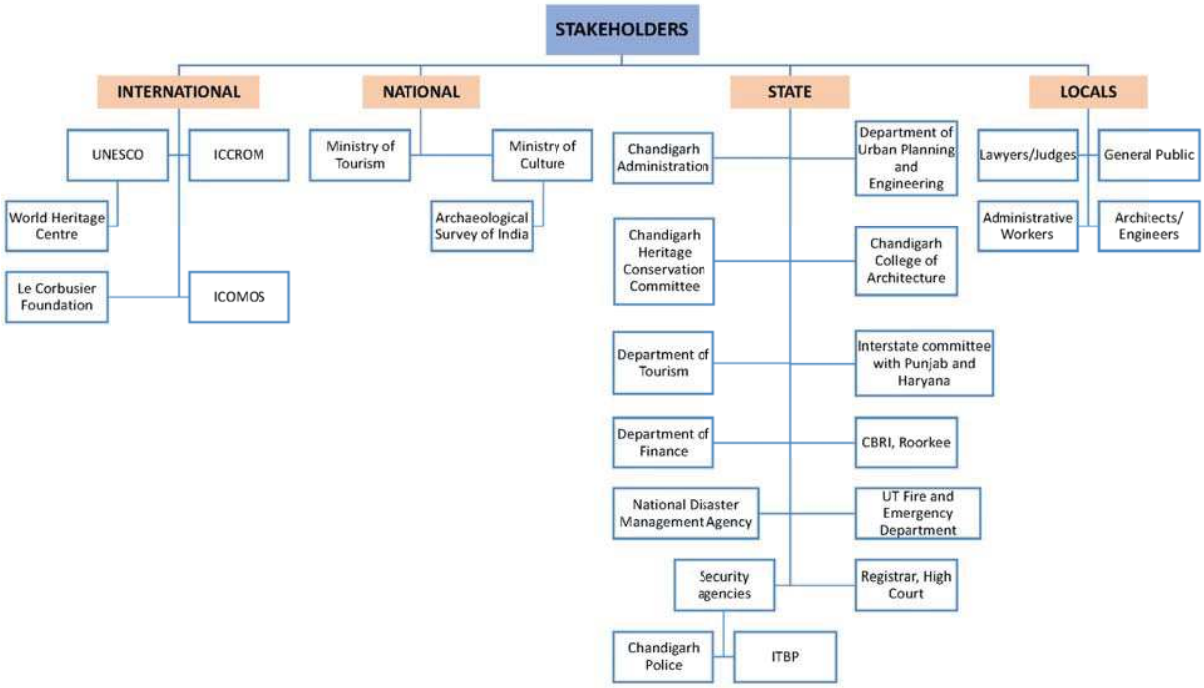


Image 4: Stakeholders flowchart © HIA Team

The scope of HIA, its content, framework, and timeline were prepared in consultation with stakeholders to carry out the impact assessment. The Chief Architect and Chief Engineer of the U.T. Chandigarh Administration were requested to provide baseline data that served as a basis for this assessment. In addition, the principal of Chandigarh College of Architecture was consulted throughout the process of assessment.

The HIA process was carried out with public participation. During the assessment, a Google form was prepared with a questionnaire addressing the need for HIA for the proposed project of multi-level underground parking in the Capitol Complex. The questionnaire was shared with local stakeholders in order to facilitate transparency and inclusivity. This encouraged the general public to put forward their opinions on the proposed project. The responses are included in the annexure.

2. Baseline Assessment

The data on the inscribed property of the Capitol Complex, its OUV, state of conservation, and protection instruments are used as a baseline for the impact assessment stages which further compares the future of the site with or without the proposed project.

This chapter will discuss the boundaries of the inscribed property and buffer zone followed by a critical analysis. The breakdown of OUV, other heritage/conservation values and attributes are included in this chapter which is further leading to the identification and evaluation of the potential impacts of the proposed action.

The following sources are referred for baseline assessment:

S.no.	Sources referred	Source of Information
1.	Nomination dossier	UNESCO
2.	State of Conservation Reports (SOC, 2018, 2020)	UNESCO
3.	Decisions adopted at WHC	UNESCO
4.	Archival drawings and images	Foundation Le Corbusier and Canadian Centre for Architecture (CCA Archives)
5.	Site survey plan (for parking site)	Chief Engineer, U.T.
6.	Site Management Plan	Chief Architect, U.T
7.	Landscape assessment Report	Chief Architect, U.T
8.	Holistic development proposal plans	Chief Architect, U.T
9.	HIA report on holistic development of High Court	Chief Architect, U.T
10.	Lidar Survey Plan of Site contours	Chief Architect, U.T
11.	Urban studies	Chandigarh Master Plan_2031
12.	Site and building studies	HIA Team
	Stakeholders consultation	HIA Team

2.1 The Capitol Complex World Heritage Site

In 2016, at the 40th session of the World Heritage Committee in Turkey, the Capitol Complex at Chandigarh site was inscribed under the board umbrella of transnational serial properties. The site was included in the list of "The architectural works of Le Corbusier" chosen among the 17 sites that are spread over 7 countries and 3 continents.

The Capitol Complex in Chandigarh is a unique and outstanding example of Le Corbusier's contribution to the creation of new types of public buildings. This is one of the most monumental compositions of modern town planning, a major contribution to the Corbusian heritage resulting from a unique geopolitical and cultural context. The three buildings of the Capitol Complex are considered the most accomplished plastic ensemble where he is at the same time architect, artist, and sculptor (Nomination dossier, 2015).

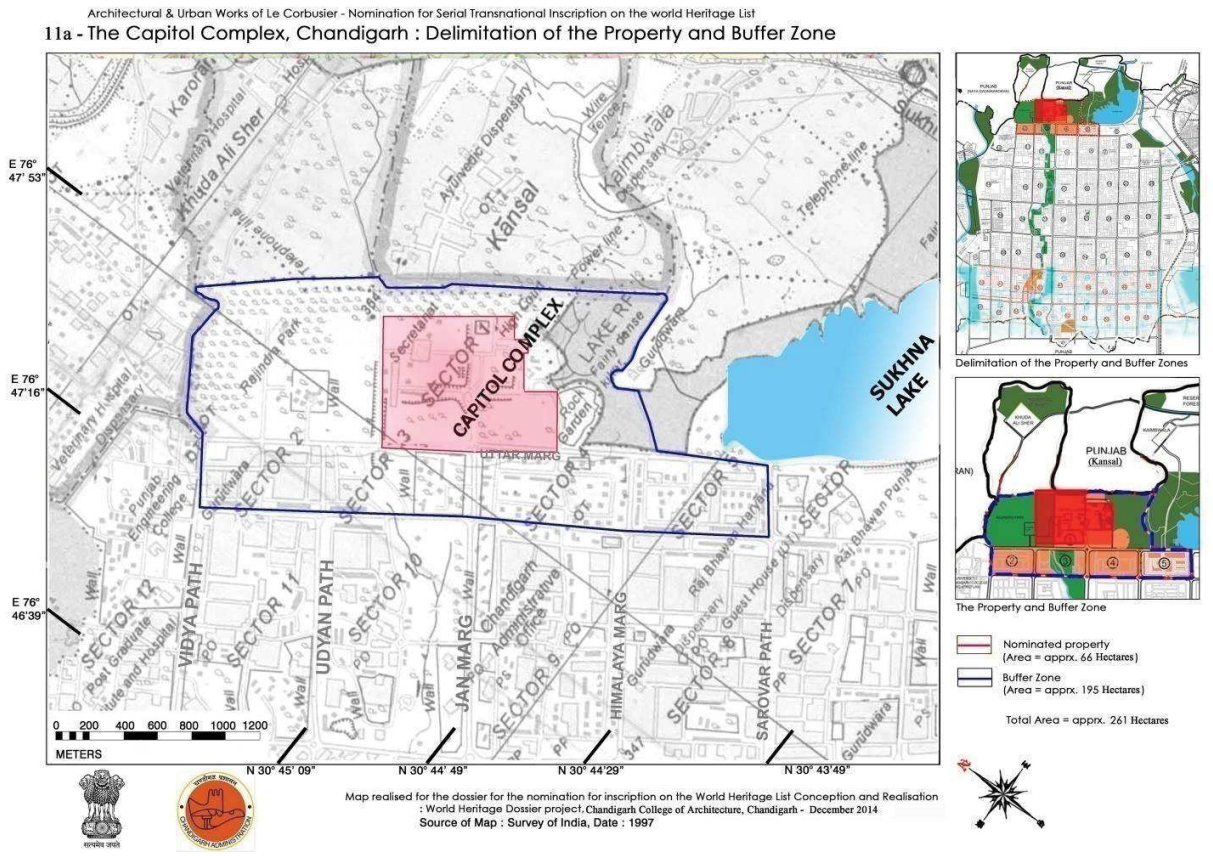


Image 5: Inscribed boundaries of Core zone and buffer zone of WHS Capitol complex, Chandigarh © UNESCO Nomination dossier, 2016

2.1.1 The WH Site

The World Heritage site, Capitol complex is located in Sector 1 at the geographic and topographic head of the city of Chandigarh against the backdrop of the Shivalik Hills towards the north (Image 6). The site is stretched across the width of the city along with Rajendra Park towards the west and Sukhna Lake on its East. The Capitol Complex is connected with the rest of the city through the ceremonial boulevard, Jan Marg (People's Avenue, V2 Capitol).

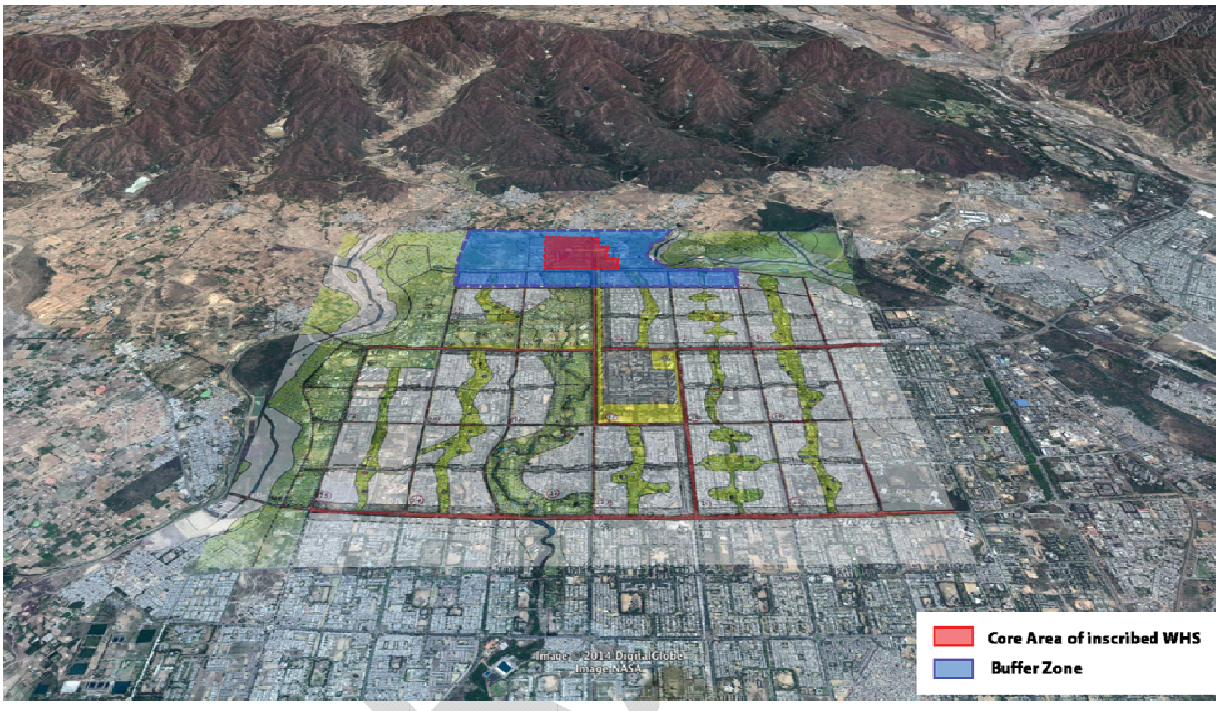


Image 6: Geographic setting of the WH site Capitol complex, Chandigarh ©http://chandigarhurbanlab.org/

2.1.2 The Core Zone of WHS

The Capitol Complex site is designed by the architect Le Corbusier consisting of a group of buildings i.e. Secretariat, High Court, and Legislative Assembly and four monuments: the Tower of Shadows, Open Hand, Martyr's Memorial, and Geometric Hill built on a monumental scale. The site is flanked by Rajendra Park on the northern edge and Sukhna Lake on the eastern. The three heritage buildings and four monuments are part of the core zone of the inscribed WH property (Image 7). The inscribed boundary of the core zone covers an area of 66 hectares (123.55 acres).

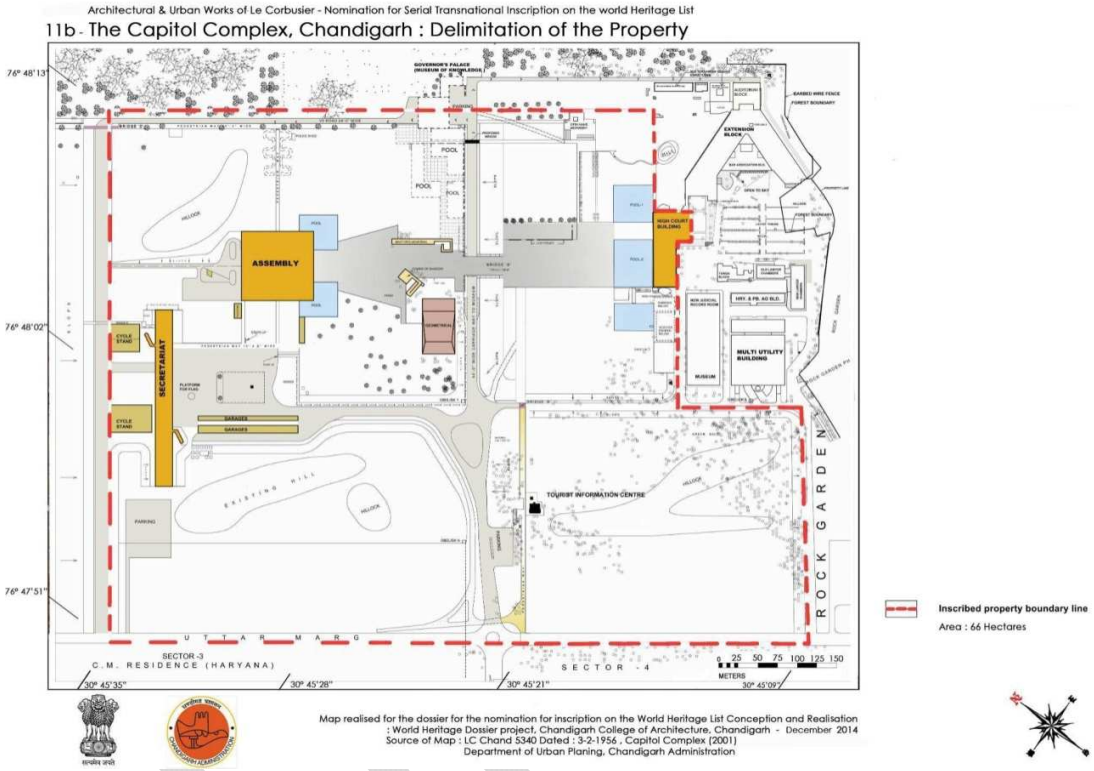


Image 7: Core Zone of the inscribed property, Capitol Complex © UNESCO Nomination Dossier

The site layout is based on an invisible geometry of three interlocking squares, their corners, and intersection points marked by 'Obelisks'. The site is planned on a cross axis wherein rigid symmetry has been avoided in the placement of buildings and monuments to enable a visual thrust towards the hills while providing each building a suitable foreground. While the linear façade of the Secretariat marks the edge of the Complex on the left side, the Assembly and the High Court are placed on the opposite ends of the cross axis, facing each other across a 450-meter Esplanade (open plaza). The placement of the Secretariat and the High Court with the longer facades perpendicular to the hills lend an unobstructed view of the foothills.

The Capitol Complex site was designed as a great pedestrian plaza with motorized traffic confined to sunken trenches. There are artificial hillocks strategically created from the excavated ground around a landscape composition. The core zone of the inscribed WH property reflects the original planning principles.

Image 8: The building and site views of WHS © HIA Team

2.1.3 The Buffer Zone of WHS

The buffer zone of the Capitol complex constitutes Rajendra park, the rock garden, and adjacent parts of Sectors 2, 3, 4, and 5 (Image 5). The buffer zone covers an area of 195 hectares (481.85 acres) The inscribed boundary of the buffer zone covers all elements that serve to protect the authenticity and integrity of the World Heritage Site.

The northern buffer is defined by the existing mango groves, the southern edge comprises the residential Sectors 2, 3, 4, and 5 which are mostly three storied low-rise developments of government and private properties. This part of the buffer further connects the property to the city along the ceremonial avenue - the V2 Jan Marg. The eastern buffer includes the High Court extension and the Rock Garden while Rajendra Park defines the western buffer. It ensures the protection of the visual connection of the inscribed property with the city. The road along the Rock Garden defines the protected Sukhna Lake Reserve forest area to ensure the environmental protection of the site.

The boundaries of the buffer zone have been established with a view to serve as an additional layer of protection to the inscribed property. The inscribed boundary and buffer zone constitute its OUV and the attributes derived from it. The buffer safeguards the WHS from developments that could adversely affect its attributes.

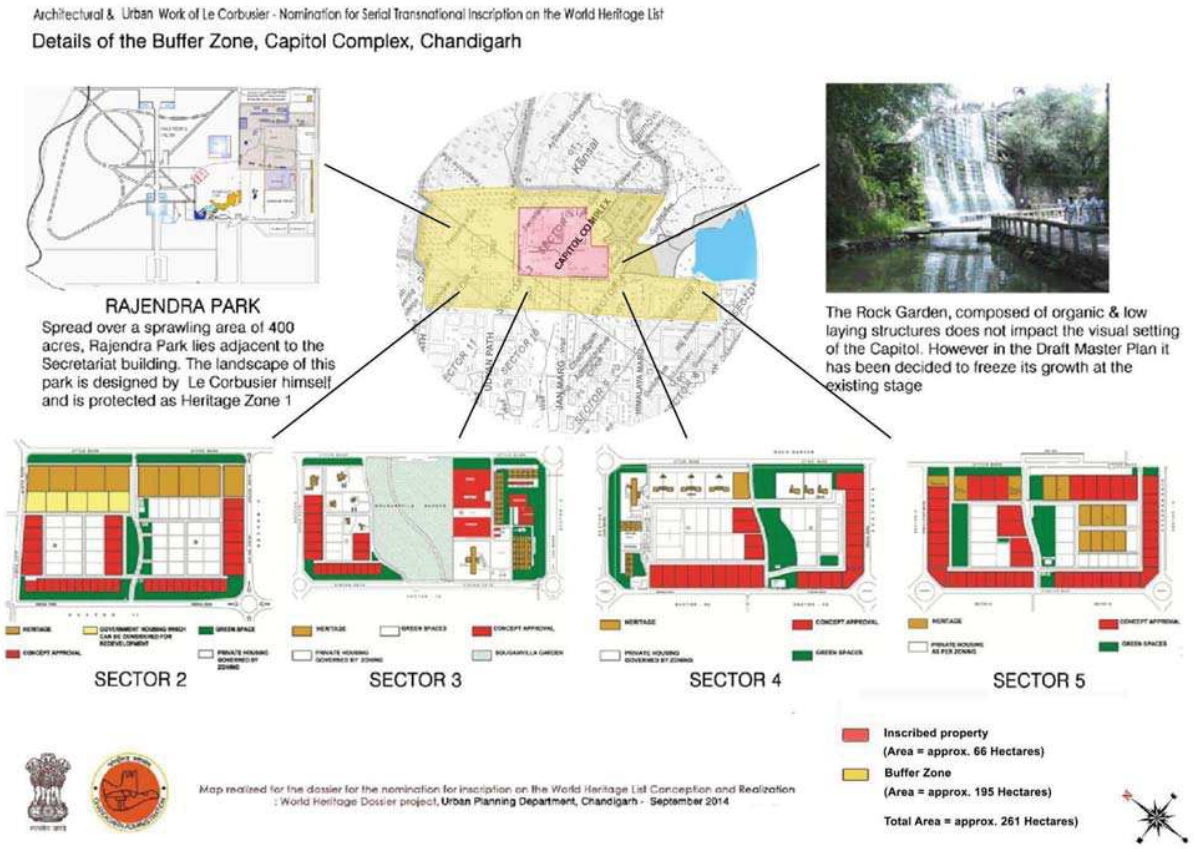


Image 9: Inscribed property and buffer zone © UNESCO Nomination Dossier

2.1.4 Key Inferences

The inscribed boundaries were drafted in 2016 and later revised in 2018. The initial inscribed boundary from 2016 did not incorporate the south side of the Capitol Complex. This was later revised to include the southern edge of the inscribed property (Image 9). The same site is currently proposed as the new multi-level underground parking. The revision in the boundary could have been foresight and may have been undertaken to protect the southern side from any future developments.

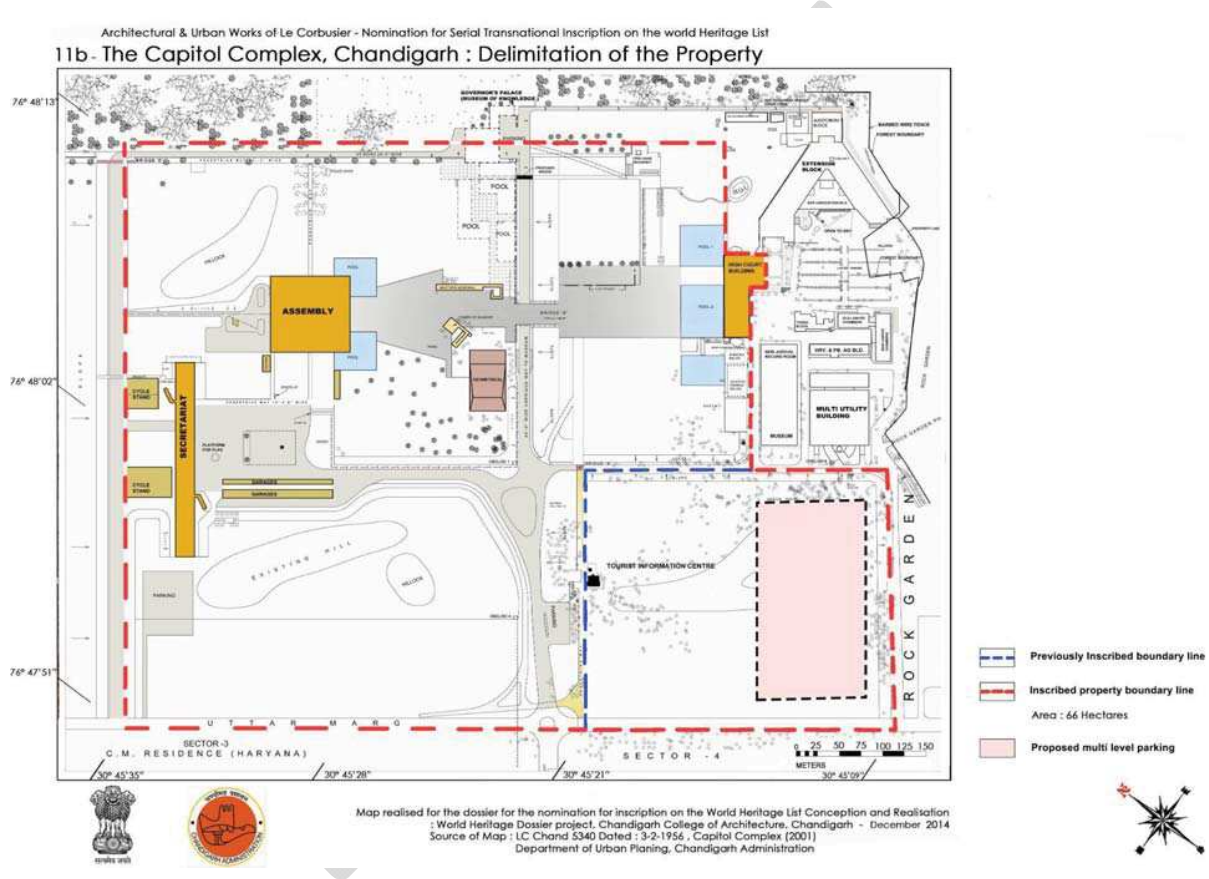


Image 10: Extent of Core zone boundary showing the location of proposed parking © UNESCO Nomination Dossier modified by HIA Team

In addition, the core zone of inscribed boundary is extended until the southern edge of the High Court building. The building is L-shaped in plan and houses nine courtrooms on the ground floor with offices above each court. On the northern front of the high court, there are three water pool structures that are part of the plaza (Image 10). The public entry is towards the rear facade facing south which is a level lower compared to the front plaza (Image 11).

As noted there is an evident need to manage the WH site towards the southern edge. The parking spaces and ad-hoc additions abutting the façade of the High Court building. The lack of breathable space between the high court and the core zone boundary is causing damage to the heritage building.

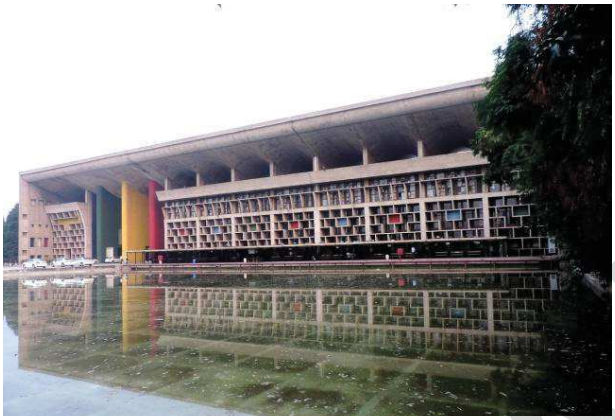


Image 11: North facade of High court

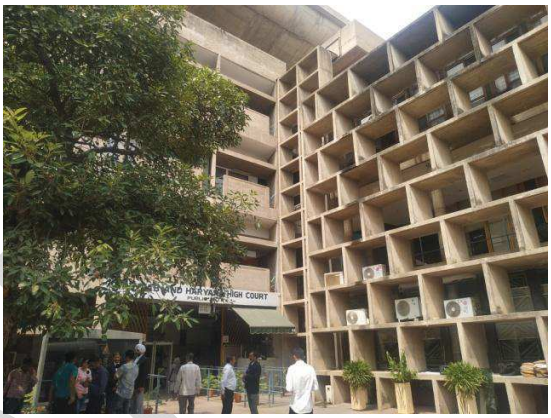


Image 12: South façade of high court

Image 13 :View from High court terrace

Image 14: Rear View of the High Court

As a consequence the original landscape of the WH site is facing adverse effects from ad-hoc additions, illegal construction, traffic congestion, unorganized parking, and upcoming proposed developments within the core and buffer zone.

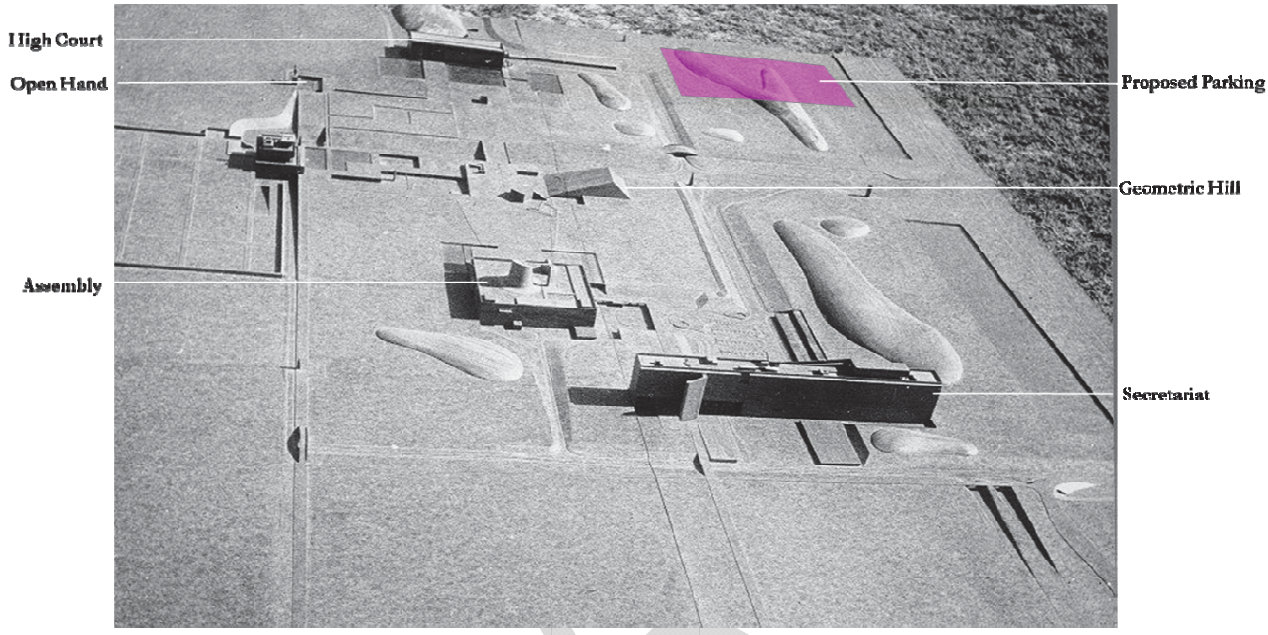


Image 15: Capitol Complex, Chandigarh © FLC/ADAGP

2.2 Outstanding Universal Value(OUV)

OUV is a central concept of the World Heritage Convention. OUV of the WHS Capitol Complex has such exceptional significance that it is relevant beyond national boundaries and has a universal value for present and future generations.

"The Architectural Work of Le Corbusier" is a **transnational serial property**, consisting of 17 sites spread over 7 countries, chosen together because they represent a unique outstanding universal value**.** The inscription of the Capitol Complex site does not claim to represent alone, the idea of the Modern Movement, but it possesses sufficient integrity to embody an outstanding contribution on a global scale.

The following statement and OUV criteria was approved in 2016. The highlighted text is emphasized in relation to the Capitol Complex since it plays a decisive role in the impact assessment.

"Brief synthesis"

Chosen from the work of architect Le Corbusier that survives in eleven countries on four continents, the sites in seven countries on three continents, implemented over a period of half a century, for the first time in the history of architecture attest to the internationalization of architectural practice across the entire planet.

The seventeen sites together represent an outstanding *response to some of the fundamental issues of architecture and society in the 20th century. All were innovative in the way they reflect new concepts, all had a significant influence over wide geographical areas, and together they disseminated ideas of the Modern Movement throughout the world. Despite its diversity, the Modern Movement was a major and essential socio-cultural and historical entity of the 20th century, which has to a large degree remained the basis of the architectural culture of the 21st century. From the 1910s to the 1960s, the Modern Movement, in meeting the challenges of contemporary society, aimed to instigate a unique forum of ideas at a world level, invent a new architectural language, modernize architectural techniques and meet the social and human needs of modern man. The series provides an outstanding response to all these challenges.*

Some of the component sites immediately assumed an iconic status and had world-wide influence. These include the Villa Savoye, as an icon for the Modern Movement; Unité d'habitation in Marseille as a major prototype of a new housing model based on a balance between the individual and the collective; Chapelle Notre-Dame-du-Haut for its revolutionary approach to religious architecture; the Cabanon de Le Corbusier as an archetypal minimum cell based on ergonomic and functionalist approaches; and the Maisons de la Weissenhof-Siedlung that became known worldwide, as part of the Werkbund exhibition.

Other sites acted as catalysts for spreading ideas around their own regions, such as Maison Guiette, that spurred the development of the Modern Movement in Belgium and the Netherlands; the Maison du Docteur Curutchet that exerted a fundamental influence in South America; the Musée National des Beaux-Arts de l'Occident as the prototype of the globally transposable Museum of Unlimited Growth which cemented ideas of the Modern Movement in Japan; ***and the Capitol Complex that had a considerable influence across the Indian subcontinent, where it symbolized India's accession to modernity.***

Many of the sites reflect new architectural concepts, principles, and technical features. The Petite villa au bord du Léman is an early expression of minimalist needs as is also crystallized in the Cabanon de Le Corbusier. Le Corbusier's Five Points of a New Architecture are transcribed iconically in Villa Savoye. The Immeuble locatif à la Porte Molitor is an example of the application of these points to a residential block, while they were also applied to houses, such as the Cité Frugès, and reinterpreted in the Maison du Docteur Curutchet, in the Couvent Sainte-Marie-de-la-Tourette and in the Musée National des Beaux-Arts de l'Occident. The glass-walled apartment building had its prototype in the Immeuble locatif à la Porte Molitor.

A few sites inspired major trends in the Modern Movement, Purism, Brutalism, and a move towards a sculptural form of architecture. The inaugural use of Purism can be seen in the Maisons La Roche et Jeanneret, Cité Frugès and the Maison Guiette; the Unité d'Habitation played a pioneering role in promoting the trend of Brutalism, while the Chapelle Notre-Dame-du-Haut and ***the Capitol Complex promoted sculptural forms.***

Innovation and experimentation are reflected in the independent structure of concrete beams of the Maisons de la Weissenhof-Siedlung, while pre-stressed reinforced concrete was used in the Couvent de La Tourette. ***In the Capitol Complex, concern for natural air-conditioning and energy saving led to the use of sunscreens, double-skinned roofs, and reflecting pools for the catchment of rainwater and air cooling.***

Standardisation is seen in the Unité d'Habitation de Marseille, a prototype intended for mass production, while the Petite villa au bord du Lac Léman set out the standard for a single span minimal house, and the Cabanon de Le Corbusier presented a standard, minimum unit for living. ***The modulor, a harmonic system based on human scale, was used for the exterior spaces of the Complexe du Capitole, which reflect the silhouette of a man with raised arm.***

The idea of buildings designed around the new needs of 'modern man in the machine age' is exemplified in the light new workspaces of Manufacture à Saint-Dié, while the avant-garde housing at the Cité Frugès, and the low-rent Maisons de la Weissenhof-Siedlung, demonstrate the way new approaches were not intended for a tiny fraction of society but rather for the population as a whole. By contrast, the Immeuble Clarté was intended to revolutionise middle class housing. The Athens Charter, as revised by Le Corbusier, promoted the concept of balance between the collective and the individual, and had its prototype in the Unité d'habitation, while ***the Capitol Complex, the focal point of the plan for the city of Chandigarh, is seen as the most complete contribution to its principles and to the idea of the Radiant City."***

2.2.1 OUV Criteria of the Capitol Complex

The Capitol Complex site as part of "The Architectural work of Le Corbusier" was inscribed based on the OUV Criteria (i), (ii), and (vi). These criteria provide the justification of the property on which the nomination was proposed.

The OUV criteria convey the attributes and values of the WHS. For the impact assessment, the attributes and values have been underlined and highlighted.

Criterion (i): The Architectural Work of Le Corbusier **represents a masterpiece of human creative genius,** providing an outstanding response to certain fundamental architectural and social challenges of the 20th century.

Criterion (ii): The Architectural Work of Le Corbusier exhibits an unprecedented interchange of human values, on a worldwide scale over half a century, in relation to **the birth and development of the Modern Movement**.

The Architectural Work of Le Corbusier revolutionized architecture by demonstrating, in an exceptional and pioneering manner, **the invention of a new architectural language** that made a break with the past.

The Architectural Work of Le Corbusier marks **the birth of three major trends** in modern architecture: **Purism, Brutalism and sculptural architecture**.

The global influence reached by The Architectural Work of Le Corbusier on four continents is a new phenomenon in the history of architecture and demonstrates its unprecedented impact.

Criterion (vi): The Architectural Work of Le Corbusier is directly and **materially associated with ideas of the Modern Movement**, of which the theories and works possessed outstanding universal significance in the twentieth century. The series represents a **"New Spirit" that reflects a synthesis of architecture, painting and sculpture.**

The Architectural Work of Le Corbusier materializes the ideas of Le Corbusier that were powerfully relayed by the International Congress of Modern Architecture (CIAM) from 1928.

The Architectural Work of Le Corbusier is an outstanding reflection of the attempts of the Modern Movement to invent a **new architectural language, to modernize architectural techniques,** and to respond to the social and human needs of modern man.

The contribution made by the Architectural Work of Le Corbusier is not merely the result of an exemplary achievement at a given moment, but the **outstanding sum of built and written proposals** steadfastly disseminated worldwide through half a century.

2.3 Other heritage Values

In addition to the OUV which broadly represents the universal values of the site, the Capitol Complex is of international, national, and local heritage significance.

The heritage and conservation values are identified based on the designation of the site from the international to the local level. These values contribute to the attributes including form and design, materials and substance, use and function, techniques and management systems, location and setting, and other forms of intangible heritage, spirit and feeling.

2.4 Key Attributes of WHS

Based on the OUV narrative, the following chapter summarizes those attributes that contribute to the OUV of the World Heritage property Capitol Complex, Chandigarh.

The attributes identified here are significant features that express the OUV of the World Heritage Site and reinforce its authenticity and integrity. The four levels of recognition such as transnational/global, International, national and local level is analyzed which convey several heritage and conservation values. The OUV criteria and values are unpacked to identify attributes that might get impacted by the proposed action.

Table 1: Heritage Values and Attributes

Level of recognition	Heritage/Conservation values	Sources of information	Attributes
OUV (Transnational and Global)	A unique transnational serial property on a global scale	UNESCO (2016), Nomination file 1321 rev	20th Century architectural (Global influence on architecture and urban planning)
	Represents a masterpiece of human creative genius		Strategic location at Geographic and Topographic "Head" of the city against the back-drop of Shivalik Hills
	Birth and development of the Modern Movement		Urban planning, 20th-century architecture
	The invention of a new architectural language		Concept of Modular scale and the Golden Section applied in the planning
	The birth of three major trends : Purism, Brutalism and sculptural architecture		Plastic creation of building and monuments, Sculptural forms of The geometric Hill, Open Hand, The Tower of Shadows, Martyr's Memorial
	Materially associated		Extensive use of Concrete (High Court, Secretariat, Assembly), Structural innovation
	Represents a "New Spirit" that reflects a synthesis of architecture, painting and sculpture		Landscape composition, the monuments and the plaza, placement of buildings and monuments, artificial mounds with heterogeneous plantation, and meandering roads/pathways

International	A masterpiece of monumental and sculptural architecture celebrating the independence of a nation	UNESCO, Nomination file, 2015	Sculptural form of architecture with more complex shapes (High Court, Secretariat, Assembly)
	Marked the impact of The Architectural Work of Le Corbusier throughout the world		Monumental Scale and empty spaces between buildings (Open spaces and plaza)
	Influence across the Indian subcontinent		Site placed against the foothills of the Himalayas
	The civic centre, derived from the theoretical principles of the Radiant City and the Athens Charter		Exceptional spatial urban design based on modular
National	Heritage Zone		Historic Urban Layout
	Grade-1 Heritage		Masterpiece of sculptural architecture, Spatial Planning and Vistas
Local	Architectural value	UNESCO (2016), Nomination file 1321 rev & SMP, 2012, Capitol Complex	Architectural style, Form, Design, Natural air-conditioning and energy saving, through the use of innovative bio-climate solutions: sunscreens, double-skinned roofs, the orientation and design of openings for transversal ventilation, reflecting pools for the catchment of rainwater and air cooling, terraced gardens
	Scientific value		Technology, Material innovation
	Artistic value		Aesthetic, Sculptural form
	Environmental Value		Gradient of land for natural drainage, Tree plantation, Green open spaces, Sukhna Lake and catchment area

2.5 State of Conservation

The state of conservation of the Capitol complex and its components are evaluated in this chapter. The chronology of buildings is presented since its inception to facilitate the understanding of the site's evolution.

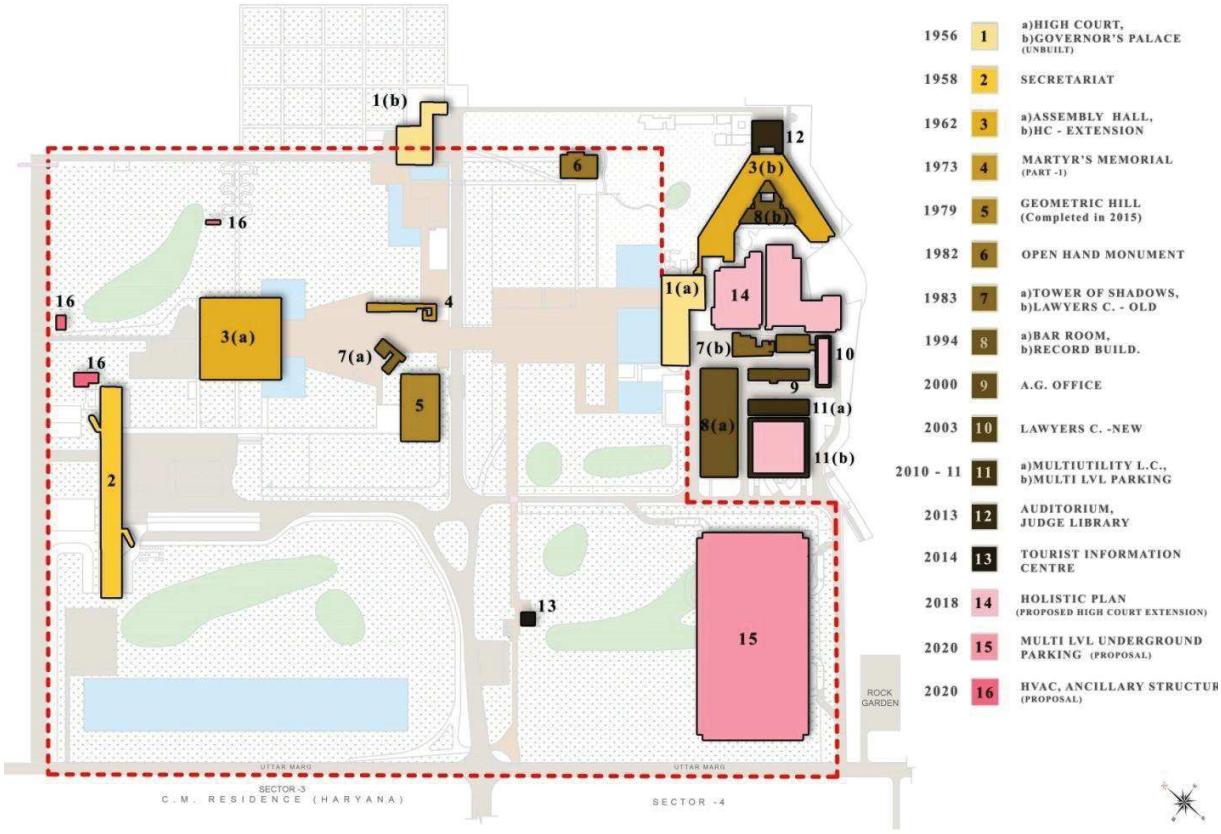


Image 16: Site evolution map of the Capitol Complex

The High Court was the first building to be completed in 1956 followed by the Secretariat in 1958 and the Assembly in 1962. The Open Hand monument is the first and most thoroughly developed monument among the other three monuments of Geometric hill, Martyr's memorial, and tower of shadows. The Open Hand monument was installed in 1982 and is standing tall between the Legislative Assembly and the High Court.

The unique Tower of Shadows was completed in 1983 in its sculptural form which highlights the play of shadow reflecting the architect's studies on the sun paths and ways to control harsh sun through penetration.

The Martyrs memorial and geometric hill were incomplete at the time of the World Heritage nomination process. Originally, the Martyrs memorial took shape in 1973 but it is yet to be fully realized in its entirety. The geometric hill was initiated in 1979 and it was completed in 2015.

The addition of a record room, lawyer's chambers, auditorium, tourist information center, and other utility buildings were added in the 1990s. The new project proposals are in the line since the WH inscription in 2016.

The Capitol Complex at present reflects the original planning principles. The three heritage buildings and four monuments of the Capitol Complex, in general, are in a fair state of conservation and constant upkeep has resulted in an overall well-preserved condition.

The open spaces within the core zone and buffer zone of inscribed property are facing threats from new developments.

The state of conservation of all the components of the Capitol Complex site is presented in the following table:

Table 2: State of Conservation

WH Site Capitol Complex	
Site Components	**State of Conservation**
High Court	**Maintained**
	No permanent changes to original design and layout have been made. On-going restoration work of the concrete and some interior spaces is in progress. Temporary Sheds for spillover from the courts are located on the north facade of the High Court.
Secretariat	**Maintained**
	Additions have been made in the past for security checks, enclosing balconies, the addition of temporary staircases, sheds, barbed wire fencing, etc.
Assembly	**Maintained**
	Ongoing restoration works in the building: exterior and interior.
Open Hand	**Maintained**
	The restoration of the metallic portion of the Open hand monument is planned to be undertaken
Geometric Hill	**Maintained**
Martyr's Memorial	**Maintained**
	Additions of sculptures near Martyr's Memorial are planned to be undertaken.
Tower of Shadows	**Maintained**

Pedestrian Plaza	**Maintained**
	Temporary barricades to address concerns for security.
Buffer Zone	**Not maintained**
	The buffer zone is not maintained facing challenges of Adhoc and unplanned construction of temporary shelters, unorganized parking, rising noise and air pollution
Views of the Shivalik Hills	**Not Maintained**
	The views of the Shivalik hills at various vantage points have been compromised. Real estate development on the north of Capitol Complex has altered the views. The setting of the property and the backdrop of the Shivalik hills is significant to its OUV.
Vehicular and Pedestrian circulation	**Not Maintained**
	Vehicular and Pedestrian circulation system has been altered. The high court road is full of on-road parking and traffic congestion is seen around the high court.

The three heritage buildings and monuments are maintained with some alterations. However, the pedestrian plaza, green open spaces in the core zone, and buffer zone are not maintained as per the original planning concept. The importance of the original planning is very high. The numerous additions, ad-hoc interventions, and extensions may blur the original site layout.

2.5.1 Authenticity and Integrity

The site meets the conditions of authenticity as recognized in the defined OUV criteria and is credibly expressed through a variety of attributes including tangible and intangible (Table 1).

Overall, the authenticity of the Capitol Complex is well maintained in the realized components i.e. the three edifices and the four monuments as well as the general layout of the Core zone of the inscribed property. However, the maintenance of open areas toward the southern edge of the property is being challenged. As a consequence, the project of multi-level underground parking was planned within the inscribed property.

The planned projects need careful attention; it may cause a state of despair to the authenticity and integrity of the site.

2.5.2 Factors affecting the WHS

Development pressure - The Capitol Complex being the administrative head of the two states of Haryana and Punjab for the past 60 years, the site has seen enormous pressure on its infrastructure and a manifold increase in the number of users and visitors. The site is facing challenges of Adhoc and unplanned construction, construction of temporary shelters, and escalating need for parking spaces.

Environmental pressure - The inscribed property and buffer zone lies in the water catchment area for Sukhna Lake and the eco-sensitive zone. The potential threat of heavy traffic poses an environmental pressure (air and noise pollution) on the property.

Natural disasters and Risk Preparedness: The inscribed property and its buffer lie in the high-risk Seismic Zone 4.

2.6 Protection Instruments

The values and attributes of the World Heritage Site are protected by a system of legal provisions, policies and standards, and a management system of heritage governance. In this chapter, the legal instruments that protect the WHS of the Capitol complex are analyzed.

The inscribed property of the Capitol complex is under the ownership of the Chandigarh Administration hence, protected with a strong regulatory and legal framework. As Chandigarh has the status of a Union Territory, it is under the direct administrative and financial control of the Central Government of India.

The Capitol Complex site has been recognized as a heritage area of Chandigarh's Enlisted Heritage Zone approved by the Government of India and confirmed as such in the Chandigarh Master Plan 2031. In addition, the Government of India's concern to safeguard the city's heritage led to the constitution of the Expert Heritage Committee under the Chandigarh administration. Therefore, no development operation, redevelopment, or engineering, by way of additions, modifications, extensions, or repairs, cannot be carried out on the WHS without the prior written authorization of the Chandigarh Heritage Conservation Committee (CHCC).

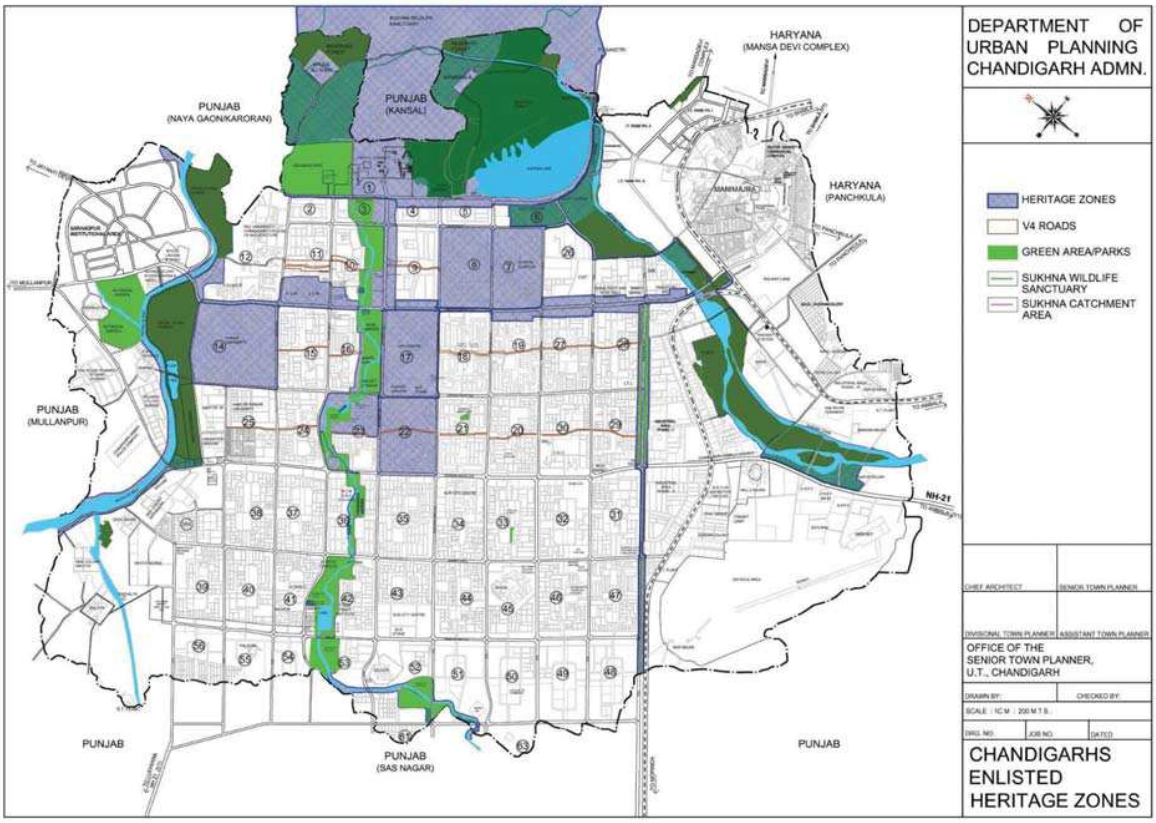


Image 17: Chandigarh Master Plan 2031 © Department of Urban Planning, Chandigarh

2.6.1 Legal Instruments

To control and regulate the development of the Chandigarh city in accordance the following acts are in place which covers the Capitol complex site under the regulations and development controls:

1. **The Capital of Punjab (Development & Regulation) Act, 1952**

   Development within Chandigarh city is being managed through various kinds of development controls. Development controls within the city have its genesis in 'The Capital of Punjab (Development and Regulations) Act, 1952.

   For the purpose of proper planning or development of Chandigarh, The Chief Administrator has the power to issue directions in respect of any site or building, either generally for the whole of Chandigarh or for any particular locality. Since the core and buffer zone of the WH site lies within the boundary of the Union Territory of Chandigarh, its management is regulated through the existing legislative framework i.e. The Capital of Punjab (Development &Regulations Act), 1952.

2. **The Chandigarh Tree Preservation Order, 1952.**

   Development within Chandigarh city is being managed through various kinds of development controls. Development controls within the city have its genesis in 'The Capital of Punjab (Development and Regulations) Act, 1952.

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3. **The Chandigarh Tree Preservation Order, 1952.**

   The Chandigarh Tree Preservation Order 1952, was framed to preserve the protected trees, groups of trees, or woodland areas which form the green cover of the City. The rules prohibit the cutting of trees in any part of the woodland area.

4. **The Chandigarh Advertisement Control Order, 1954.**

   Under the Chandigarh Advertisement Control Order, 1954, no person in Chandigarh can install or put up a board or banner without prior permission in writing from the competent authority. Chandigarh does not allow any hoarding or boards or banners or any sort of advertisement at Sukhna lake, all roundabouts, Madhya Marg, Jan Marg, and all other main streets. At places other than these, it is only with the due permission of the civic body commissioner that hoardings can be allowed upon payment of a specific advertisement fee.

5. Central Air Prevention and Control of Pollution Act, 1988, declaring Chandigarh as an "Air Pollution Control Area".

The entire Union Territory of Chandigarh was declared an 'Air Pollution Control Area' under the Air (Prevention & Control of Pollution) Act, 1981 on 1st February 1988 by the Ministry of Environment & Forests. Earlier, the Central Pollution Control Board was enforcing the Environmental Acts/Rules in Chandigarh. After 1991, the Chandigarh Pollution Control Committee became responsible for performing the functions of the State Pollution Control Board in Chandigarh. The Ministry of Environment & Forests has notified National Ambient Air Quality Standards for various pollutants and the Chandigarh Pollution Control Committee monitors ambient air quality at five different locations and implements various Environmental Acts/Rules in Chandigarh. The ambient air quality of Chandigarh is now under pressure.

6. Notification declaring the nominated property in the silent zone

The Sukhna Lake in Chandigarh comprises an area of 3 sq km is an artificial lake at the foothills of the Himalayas, the Shivalik Hills, and forms part of the Capitol Parc designed by Le Corbusier. This rain-fed lake was created in 1958 by damming the Sukhna Choe, a seasonal stream coming down from the Shivalik Hills, and was a gift to Chandigarh citizens for the enjoyment of peace and tranquility. The area was declared a Silence Zone in 2002.

7. Draft Chandigarh Master Plan 2031

The Chandigarh Administration has finalized the Draft Chandigarh Master Plan 2031 which has given due emphasis to the protection of Chandigarh's enlisted heritage and the recommendations of the Expert Heritage Committee. The Draft Heritage Conservation Regulations are also being prepared. Any further intervention/development within the heritage property and the buffer will be regulated through the overall supervision of the notified Chandigarh Heritage Conservation Committee (CHCC).

8. No Development Zone

The Edict of Chandigarh prohibits any urban development to the north of the Capitol Complex. This was reiterated by the Chandigarh Urban Complex Plan prepared in 1977 by the Coordination Committee. This plan clearly indicates the area of Kansal Village (falling in Punjab) north of the Capitol complex as a "No Development Area'.

9. Notified Eco-sensitive Zone (Securing the Lake's Catchment and Wildlife Sanctuary):

As of 2018, the area comprising Sukhna Lake has been declared an eco-sensitive zone. The entire catchment of Sukhna Lake must be protected from any activities that may threaten the lake's lifespan. No development near the Wildlife Sanctuary should contravene the objectives of Wildlife conservation. The inscribed property of the Capitol complex lies within the Eco-sensitive Zone of Sukhna wildlife sanctuary.

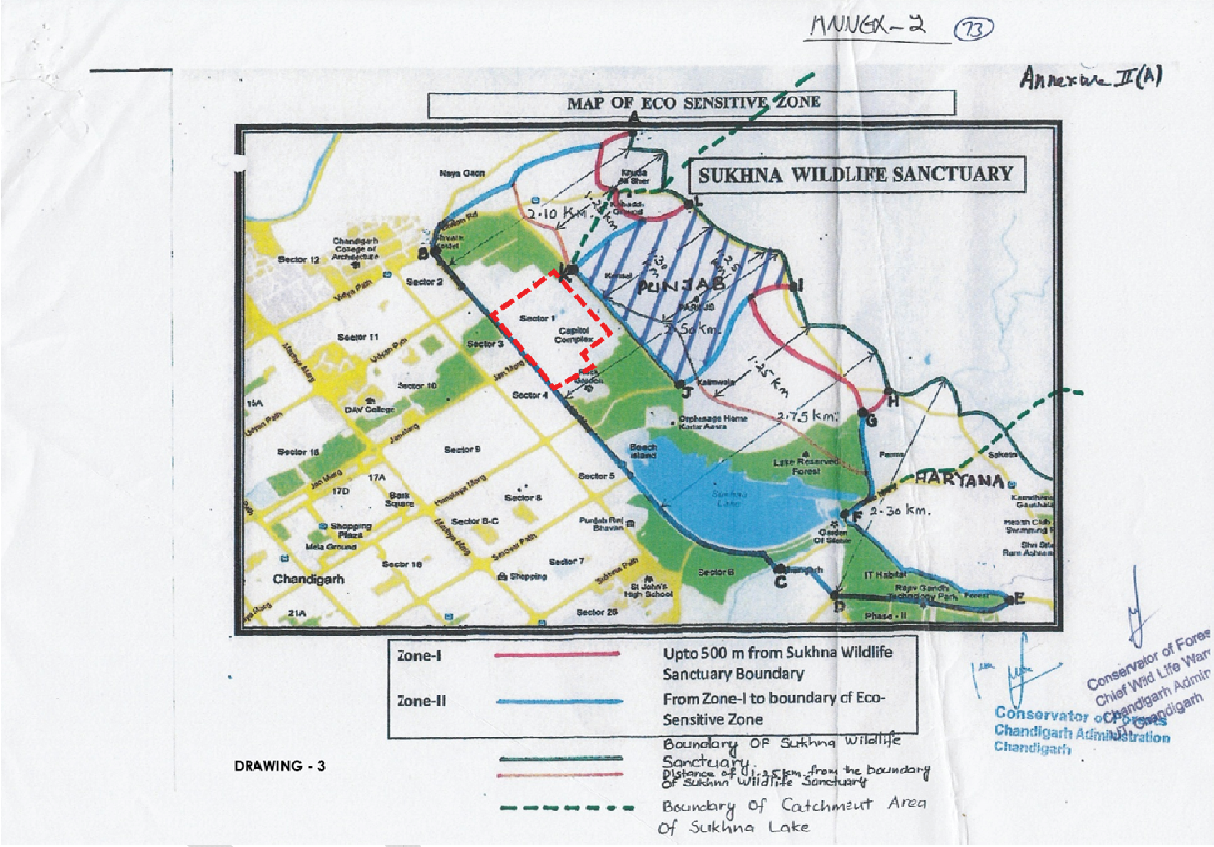

Image 18: Map showing the extent of Eco-sensitive Zone © UNESCO Nomination dossier, 2016

2.6.2 Analysis of the governance and heritage management system

The entire WH property including all its components tangible and intangible is under the jurisdiction of the Chandigarh Administration, Government of India. The buildings are jointly used by the states of Haryana and Punjab under the ownership of the Chandigarh Administration.

Although the property enjoys greater protection both locally and nationally and its preservation has been incorporated within the Chandigarh Master Plan 2031, the city's exponential growth has created a greater need for its physical protection. The WH site of the Capitol Complex is under good governance and due diligence in terms of monitoring and responsibility towards its protection which has resulted in regular maintenance works and initiation of new projects.

The project of multi-level underground parking is planned to solve the long-time issue related to parking. However, the site proposed within the Core zone automatically triggers the issues of site management, stakeholder involvement, and environmental and infrastructural development that might affect the WH property. The buffer area is also experiencing a compromised state of authenticity and integrity due to the lack of management and enforcement of the law.

The existing instruments are in general sufficient to protect the WH property Capitol complex, but the following enforcements are necessary:

- The Capitol Complex should be mentioned as a UNESCO World Heritage site and prioritized as part of the urban developments and planning in the current and future Chandigarh Master Plans. The WH site should be highlighted among the other heritage buildings as part of the historic urban landscape in the City.
- To meet the protection requirements of the UNESCO World Heritage Convention, it would also be essential to encourage and establish regulations on the protection of the buffer zone of inscribed property to protect its imageability and views.
- Planned actions should be taken in consultation with heritage experts for effective management of core and buffer zones.
- The Eco-sensitive zone and water catchment areas should be protected from any environmental degradation activity including cutting of trees, removing top soil, disturbing the natural underground aquifer, pollution, etc.

3. Proposed Multi-level underground parking and Alternatives

This chapter gives a description of the proposed project of **Multi-level underground parking** within the inscribed property of the Capitol Complex. The relevant data on the proposal and the current status are used as a basis for analyzing the positive and negative effects of the project on the OUV of the Capitol Complex.

3.1 Location of Multi-level underground parking

The planned project of multi-level underground parking is located towards the southern edge of the inscribed property along Uttar Marg. The project area is enclosed by the existing high court road from north to the south side and utter marg on the west side. The site is in proximity to the heritage building and monuments of the Capitol Complex.

The proposed site will cover an area of approx 8.5 acres at the surface level. The rectangular area marked on the map is proposed to be utilized for the project (Image 19). The area is presently used as a temporary parking space for visitors.

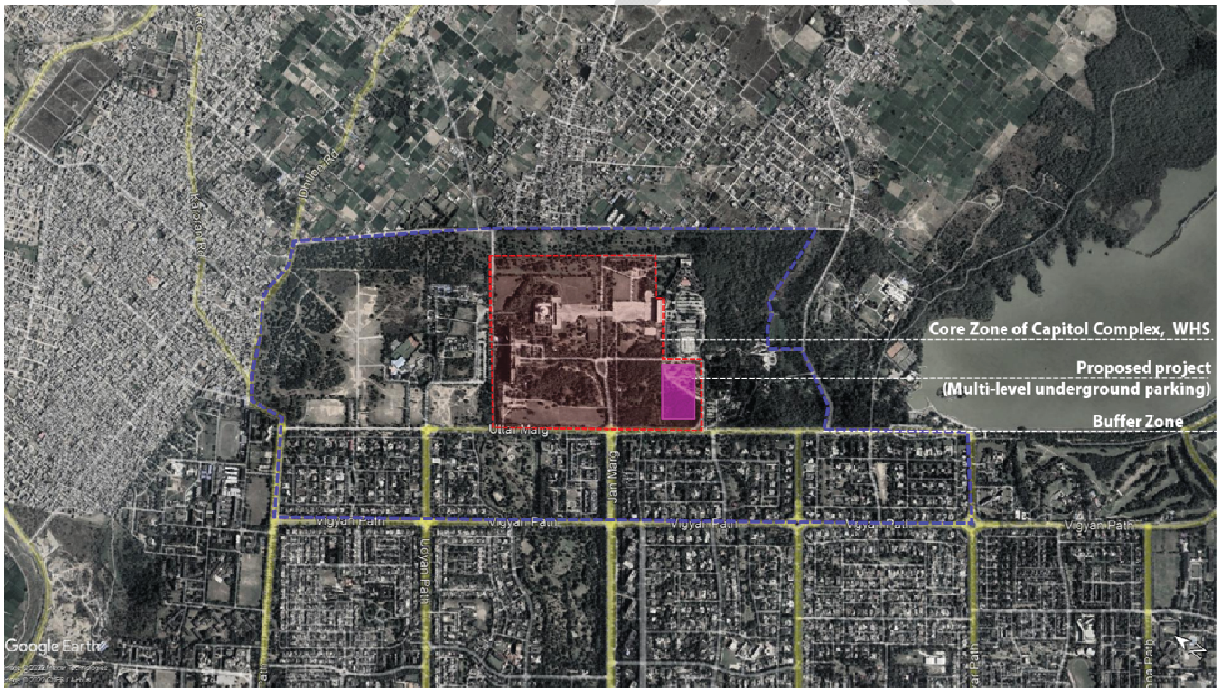

Image 19: Satellite view of the World Heritage site Capitol Complex showing the project area © Google earth, modified by the HIA team

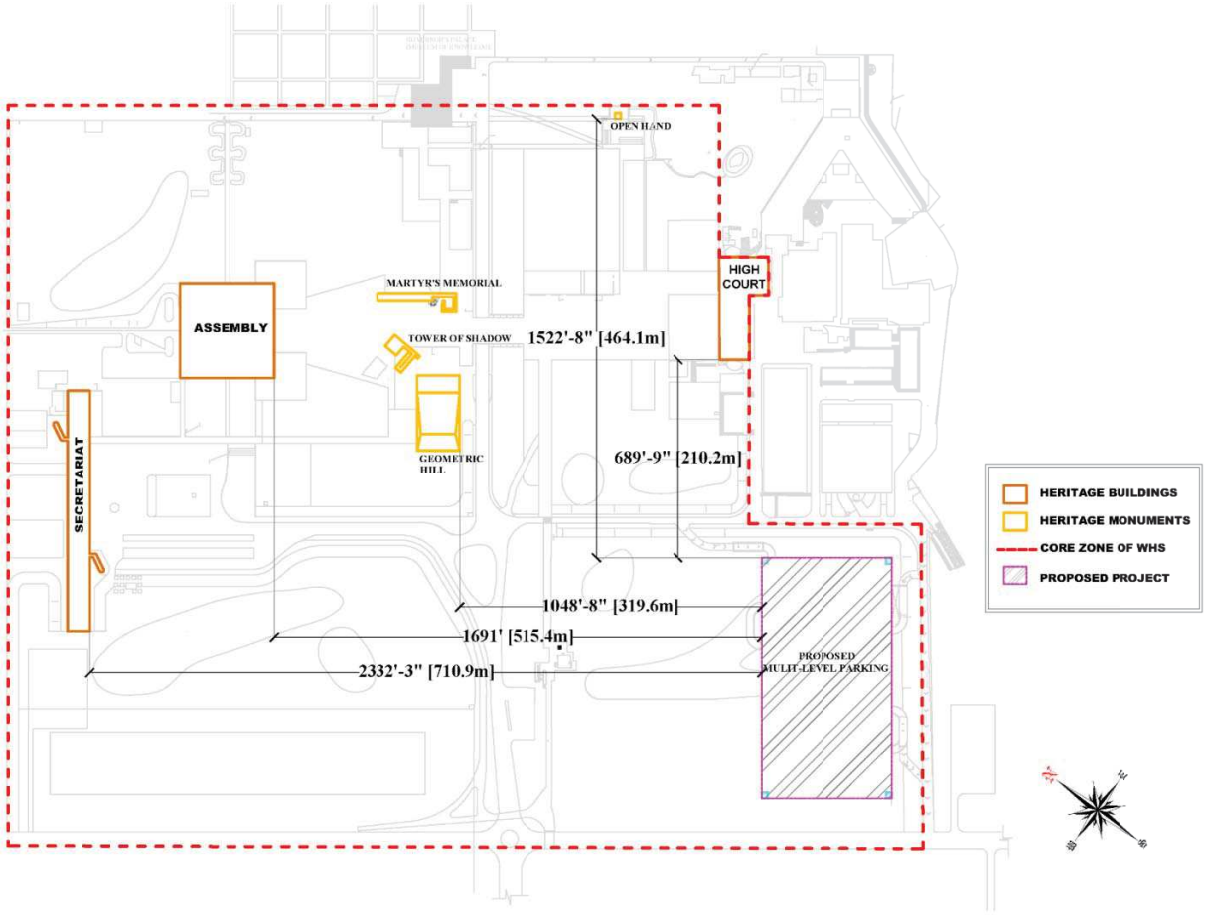

Image 20: Capitol complex layout showing the distance from the project area © HIA Team

The High Court is located on the northeastern side of the proposed site, it is at a distance of about 220 meters. The Assembly building is on the north westerns side at a distance of 515 meters and the Secretariat building is located at a distance of 710 meters from the proposed site. The Geometric hill, Tower of Shadows, and Martyrs memorial are at a lateral distance of 320 meters. The Open Hand is located north at 464 meters distance. As a consequence, the project area lies within the core zone of the World Heritage property, the Capitol complex, and is in the vicinity of the heritage buildings, monuments, and pedestrian plaza.

3.2 State of the current parking in WHS

The Capitol Complex site is experiencing a growing no. of users which led to parking infrastructural development in the complex. There are several spaces provided for parking within the core zone of the inscribed boundary (Image 21).

As analyzed, the site has already reached a saturation level of providing parking spaces and it is negatively impacting the OUV of the WH property. The existing parking spaces are insufficient and the need for parking is escalating day by day.

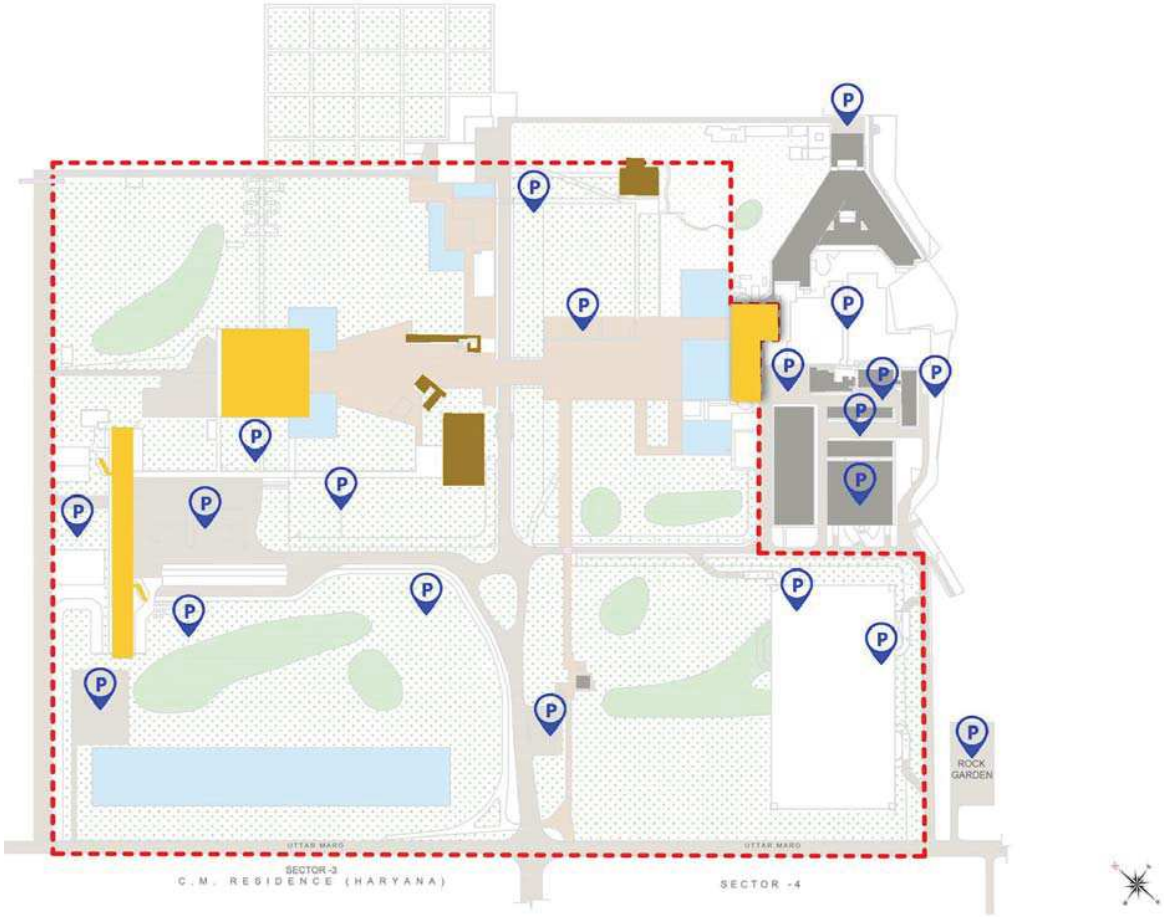

Image 21: Existing parking in the core one of inscribed property © HIA Team

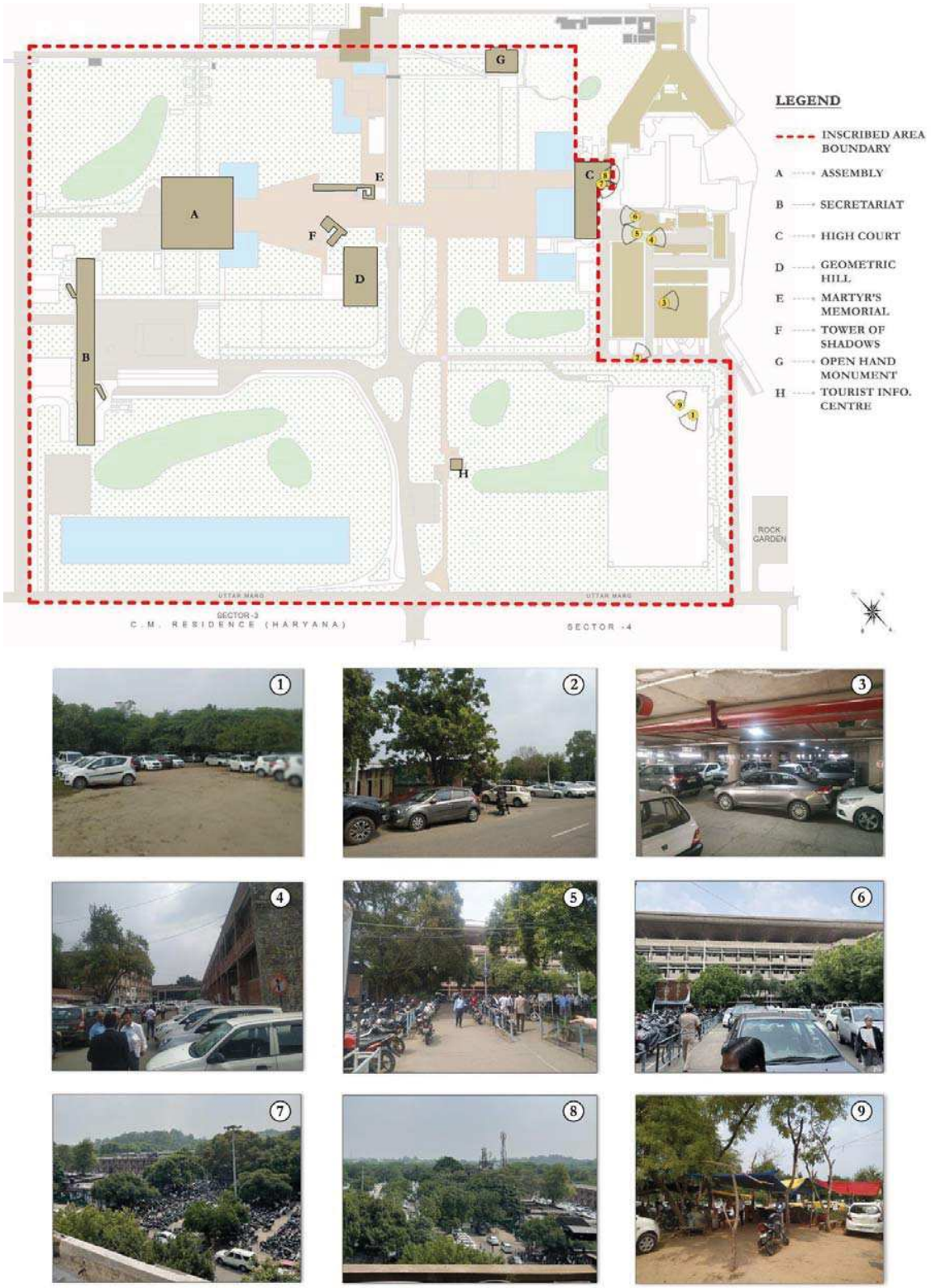

Image 22: Site views showing the existing parking concentration near the High Court © HIA Team

3.3 Need and objectives of Multi-level underground parking project

The capitol complex site is a living heritage and in active usage, therefore, it becomes important to facilitate the access of everyday users and tourists to the historic site. The multi-level underground parking is proposed to fulfill the needs and demands of the local stakeholders.

The High Court is privy to 3,920 employees, 68 judges, and around 5,000 daily visitors. The existing parking behind the High Court sees heavy traffic and consequent noise and air pollution.

Due to an increase in litigation, record, staff, and advocates, the additional parking project is planned keeping in view the demands from the Honorable High Court authority.[5]

Image 23 & 24: Showing the multi-level underground parking project area

[5] "State of Conservation Report," 2020.

3.4 Multi-level Underground Parking Project

3.4.1 Site Description

The proposed project of multi-level parking is designed by the Department of Urban planning Chandigarh Administration. The project aims at constructing three underground floors with a total coverage area approx 11,56,542 sq ft (26.5 acres). While the design is conceptualized to be completed in two phases to provide additional parking spaces in the second phase, the first phase aims at constructing the complete structure without stacks(an automated system for the horizontal and vertical system).

In the first phase, the total capacity of the building is 3075 cars (without stack). In the second phase, the stacks will be added which will carry the capacity of 6235 cars.

The proposed site can be accessed from utter marg and will have three ramps for entry and exit to the underground parking. The two ramps will be provided along the longer edge of the proposed rectangular building and one ramp will be connected from the inner road connected to the High Court (Image 25).

Image 25: Site Plan of proposed parking © Department of Urban Planning, U.T. Chandigarh

3.4.2 Architectural Description

The building is planned in a rectangular shape with 447'6"(252.6 m) length and 829'6" (136.2 m) width. The three access ramps are 24'9" (7.3 m) wide and connected from the road level to all three underground floors. Each floor has a clear height of 12'3" (3.65 m). The internal layout of floor plans is organized to provide parking space at an angle of 90°.

The underground parking will consist of 26 no. of cutouts (skylights) raised at a height of 6'0" (1.8 m) above the surface level. These skylights are proposed for the provision of light and ventilation to the underground floors. The provision of ten staircases along with lifts is given which will have lift headroom at 15'0" (4.5m) height from the surface level.

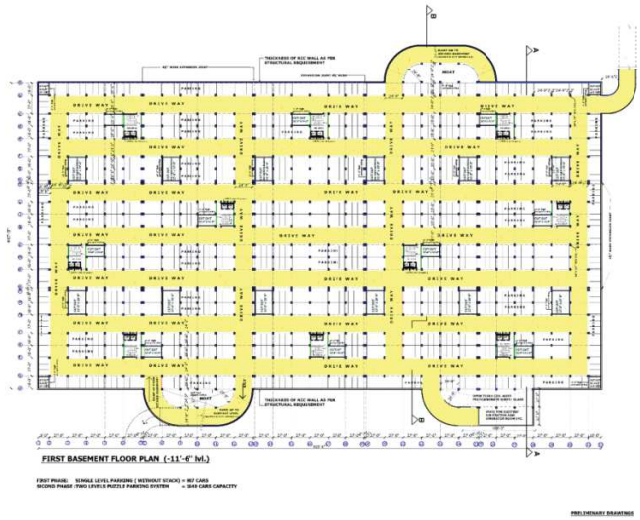

Image 26: First underground floor plan © Department of Urban Planning, U.T. Chandigarh

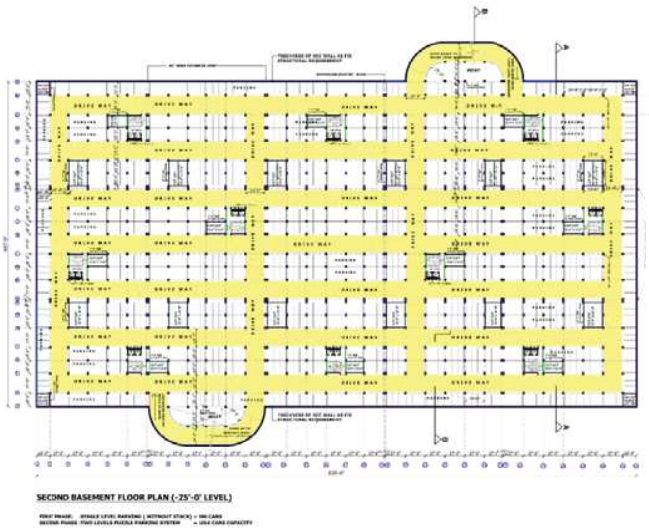

Image 27: Second underground floor plan © Department of Urban Planning, U.T. Chandigarh

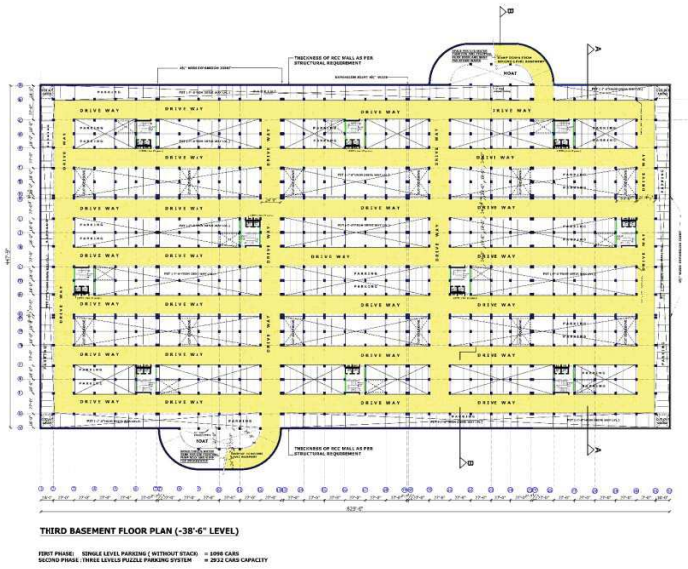

Image 28: Third underground floor plan © Department of Urban Planning, U.T. Chandigarh

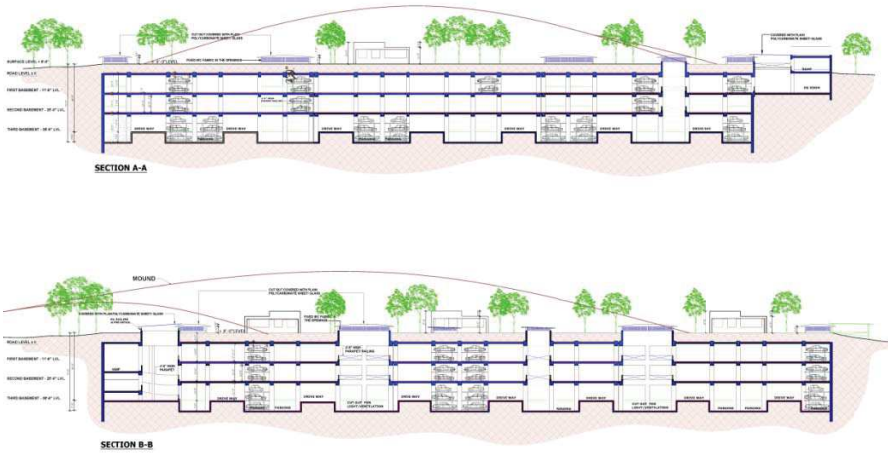

Image 29: Cross sections of proposed parking © Department of Urban Planning, U.T. Chandigarh

The dimension and areas are taken from the planning documents made available by the Chandigarh Administration.

Table 3: Dimensions and Areas of the Proposed Parking

	Area	Height
Surface area Three additional ramps for entry and exit 24'9" (7.3 m) wide	371,577 sq ft (8.5 acres)	
Built-up area (Lift headroom and skylights) at surface level	11,992 sq ft (0.3 acres)	Lift Headroom 15'0" (4.5 m), Skylights 6'0"(1.5m)
First Floor built-up area	3,83,280 sq ft (8.8 acre)	13'6" (4.1 m)
Second Floor built-up area	3,70,750 sq ft (8.5 acre)	13'6" (4.1 m)
Third Floor built-up area	3,90,520 sq ft (8.9 acre)	20'6" (6.3 m)
Total built-up area	**11,56,541 (26.5 acre)**	53'6" (16.2 m)
Total height of the structure		**68'6" (20.7 m)**

3.4.3 Construction details

The proposed multi-level underground parking will be constructed as RCC framed structure. The foundation of the parking will be of RCC raft foundation. As specified by the engineer, the structural design will be based on the geotechnical investigation. The retaining walls and roof will be in an exposed concrete finish similar to existing underground parking in the High Court premises (Image 30 & 31). As specified in the cross-section (Image 23), the proposed skylights will be covered with plain polycarbonate sheet/glass and the opening will have fixed IRC fabric.

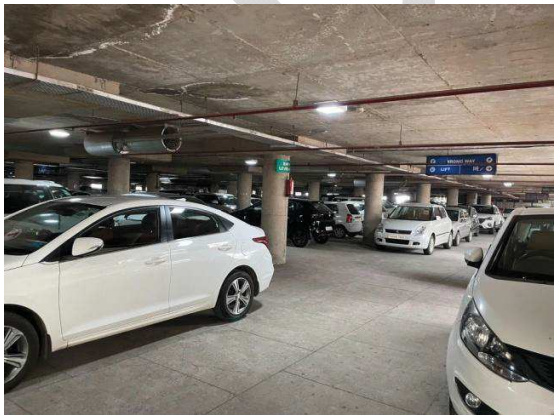


Image 30 & 31: Existing underground Parking behind High Court

3.4.4 Key Inferences

Initially the design of the multi-level parking was prepared to essentially preserve the authenticity and integrity of the Capitol complex site by providing additional infrastructure to ease the parking problems on the surface.

However, while considering the parking design to conceal the structure underground, there are 10 no. of lift headroom and 26 no. of skylights that are projecting above the surface level at about 6 feet and 15 feet height. In addition, the parking will be constructed covering a surface area of about 8.5 acres. To carry out the construction of a large rectangular parking plot more than 100 trees will be cut down. The above-ground construction is obstructing the original landscape composition, visual integrity, and changes in the original site levels.

Furthermore, the access ramps have been provided to bring more cars from the existing high court road within the inscribed property. It will cause traffic congestion, noise, and air pollution around the WH site.

In addition, the natural drainage of surface water is not yet addressed in the design stage. As noted, the new proposed design also lacks to address universal accessibility for a World Heritage Site.

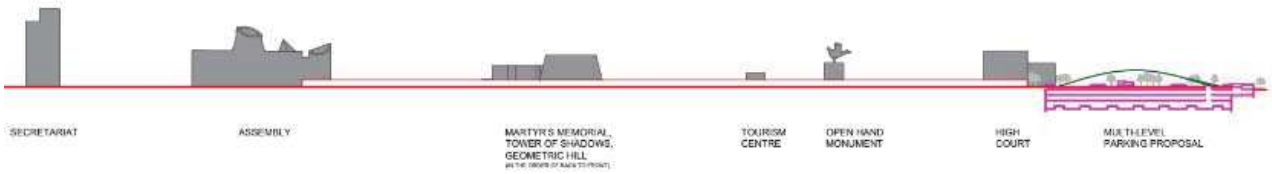

Image 32: Cross section of the Capitol complex site showing the proposed project © HIA Team

3.5 Alternatives of the proposed Multi-level underground parking

In this section, the three alternatives of the proposed project are assessed including the 'no project' alternative. The scenarios with or without a project are evaluated that may impact the WH site.

3.5.1 Scenario 1: "No Project"

Before discussing possible alternatives for the multi-level underground project, it is necessary to evaluate the option of "no project". As the project is proposed within the core zone of the World Heritage Site, it can only be justified if it delivers substantial environmental, social, and economic benefits that outweigh any impact it may cause on the OUV and heritage values. The proposed project is aimed to address the issue of traffic congestion and cater to the escalating need for parking spaces in the Capitol complex site.

In the case of "No project"

- The Capitol Complex has reached a saturation level of accommodating multiple parking spaces within the core zone of the inscribed property and it is negatively impacting the OUV of the WHS.
- The existing parking spaces are insufficient and the need for parking is escalating day by day causing an increase in the use of open spaces as surface parking at WHS. However, with effective management, the existing parking can be organized and used efficiently.
- The core and buffer zones of the site are experiencing adverse impacts from the unorganized surface parking all around the heritage building and monuments. The current parking situation is causing traffic congestion, illegal constructions, air, and noise pollution, and ad-hoc additions.
- The lack of management & monitoring systems of the WHS has created an imbalance between the demand and need for parking. The current situation needs long-term sustainable actions to protect the OUV of the WHS.

3.5.2 Scenario 2: "An Alternative Project"

The alternatives are explored to determine the solutions to current parking problems. Although additional parking is necessary, providing multi-level underground parking in the core zone of the capitol complex is not a long-term sustainable solution.

As per the baseline assessment, the following alternatives are explored:

- A pragmatic approach needs to be considered to decongest the High Court to find a long-term solution. Due to the increasing inflow of the general public coming from nearby states, the site is facing challenges in parking private vehicles. The decongestion could be done in several ways such as splitting the High Court activities and moving a few activities to the other courts in the City that will reduce the burden on the WHS.
- Alternate parking lots may be identified outside the core zone of the inscribed property and shuttle bus services could be provided to transport litigants and other public to the site.
- The existing on-site parking could be limited only to the Judges and other working staff and drop-off service could be provided. The provision of organized surface parking in the buffer zone area might be considered.
- The existing basement parking behind the high court could be efficiently used for working staff at the High Court such as Judges, lawyers, and other staff. The general public coming to high court through private vehicles should be limited and the use of public transport to be encouraged.
- The eco-friendly mobility options may be considered to reduce the parking infrastructure development pressure on the WHS. Options such as introducing dedicated bicycle lanes along the green spaces instead of cutting more than 100 trees, electronic or battery-operated vehicles, odd-even regulations, Carpooling, and strengthening the public transport system may be considered.

3.5.3 Scenarios 3: "Proceeding with the proposed project"

The scenario of proceeding with the proposed project is assessed to determine its potential impacts on the WHS.

In the case of "Proceeding with the project"

- The proposed multi-level parking will provide additional space to accommodate 3075 cars in the first phase and 6235 cars in the second phase. This might solve the current parking issues in and around the inscribed property and would increase the carrying capacity of the site. However, it may lead to increasing footfall in the core zone causing overcrowding.

- The unorganized parking spaces in the core and buffer zone of the WH site might move to the proposed site where the parking will be concentrated at one location. This would create a foreground for the heritage building views and cater to the needs of all users including tourists, working staff, the general public, etc. However, it would require an additional burden for the management and monitoring of the WH property for securing reasons.

- The construction of underground parking will require site clearance of about 8.5 acres area at the surface level which would cause damage to site planning existing trees, artificial mounds, and original landscape composition. This may lead to environmental degradation, natural disaster, and disturbance to the eco-sensitive zone.

- The provision of multi-level underground parking means expansion of the incoming population and an increase in footfall to the WH site may be a potential threat.

- Due to the high-security nature of the High Court and its staff, the provision for so many private vehicles within the core zone of the inscribed property may cause threats.

- Although the provision of additional parking areas is necessary, it is only a short-term solution to the issue and the demand will only grow over the years, giving rise to more parking requirements may cause a negative impact on the OUV of the World Heritage site.

4. Identification and Predicting Impacts

In this chapter the potential impacts of the proposed actions are identified and assessed. Further, the interaction between actions and potential impacts is discussed.

Based on the characteristics of the proposed action the four categories are identified that will have different impacts on the attributes. The multi-level underground parking will have physical interventions underground, above ground, on the surface, and new operations of the existing.

1. **Underground Construction of Three-floors (Total covered area 26.5 acres)**
2. **Above - ground Construction of Lift headroom (10 no @ 15'0" height) Skylights (26 no. @ 6'0" height)**
3. **Construction of new ramps (3 no.) for vehicular access**
4. **New operation of existing roads and pathways**

The following table is prepared to identify and ascertain the impacts (environmental and social)of the proposed development of multi-level underground parking on the OUV of the WH site Capitol Complex. The table also helps in determining the type of the characteristics of these potential impacts, including disclosure of any uncertainty. It highlights what changes to OUV and other heritage/conservation values would occur as a result of the proposed action which is both positive and negative.

Table 4: Identifying Potential Impacts

	Element of Proposed Action that has the Potential to Cause an Impact			
Attributes	**Proposed Project - Three floors underground parking**			
	Underground Construction of Three-floors parking (Total covered area 107446.3 sqm area)	**Above ground Construction of** **i. Lift headroom** (10 no @ 15'0" height) **ii. Skylights** (26 no. @ 6'0" height)	**Construction of new ramps (3 no.)**	**New operation of existing roads and pathways**
Historic Urban Layout		**X** New construction may affect the original intended urban layout		
Site Planning	**X** Change in the geometric layout planning altering the original intent	**X** Change in site levels and aesthetics altering the original intent		
Original Landscape composition		**X** Changes in spatial composition (construction of lift headroom and skylight may cause damage to the original landscape	**X** Changes in original circulation, walkways, softscape and hardscape, and artificial mounds thereby altering the integrity and authenticity	
Esplanade (Plaza)		**X** Lift headroom and skylights may disturb the spatial experience of plaza		**X** May increase no. of visitors causing unwanted crowding in the plaza
Original roads and pathways			**X** Changes in the original site orientation and circulation thereby altering the integrity	**X** May increase traffic thereby air and noise pollution in the core zone

Imageability & Views		**X** Disturb the original aesthetics of site	**X** Disturb the serenity of the site	**X** Increase in traffic movement in the protected area may disturb the site views
Heritage buildings (High Court, Secretariat Building, Legislative Assembly)	✓ Opportunity to reduce parking abutting the high court, may create foreground for building views (+)			**X** New access route may increase people causing disturbance in the protected area
Monuments (The Geometric Hill, Open Hand, Tower of Shadows, Martyrs Monument)				**X** Increase in tourism pressure may need additional infrastructure
Artificial mounds	**X** Underground excavation of three floors will change original ground levels	**X** Original mounds may disappear	**X** Change in site topography	
Heterogeneous plantation	**X** Cutting of Trees affecting the microclimate and the existing ecosystem	**X** New intervention may disturb the microclimate and the existing ecosystem	**X** Creation of more hard surface would destroy existing plantation thereby altering the microclimate and the existing ecosystem	
Catchment area (Sukhna Lake)	**X** Construction activities may disturb eco-sensitive zone of Sukhna lake	**X** Vegetation and topsoil removal may lead to eventual natural disaster	**X** Construction activities could effect on water catchment	

4.1 Results

For the new underground multi-level parking, it is determined that the proposal will have **DIRECT IMPACTS** on the OUV and other heritage/conservation values of the Capitol Complex. The new construction will alter the original site levels, site planning, circulation, landscape (topography, artificial mound), and imageability thereby altering the integrity and authenticity of the WH site.

The proposed actions will also have **INDIRECT IMPACTS** where the direct impacts will have follow-on impacts such as more traffic, leading to air and noise pollution, tourism pressure, environmental degradation, and damage to the existing eco-sensitive zone and water catchment area of Sukhna lake.

5. Evaluation of impacts

After understanding the potential impacts this chapter evaluates the severity of these impacts on the attributes which sustain the OUV and on other heritage values.

All these interventions occurring due to the construction of the multilevel underground parking including above and below ground along with changes in traffic circulation patterns will have a **major negative impact** on the OUV of the capitol complex site. The negative impact would be significant, but with avoidance and mitigation measures it could be eliminated or minimized to an acceptable level.

The following categories of impacts (negative or positive) are identified based on the characteristics of actions

- **Neutral**: The potential impact reveals that no change would occur to the attribute.
- **Minor**: Impact shows that the change would be negligible.
- **Moderate**: Impact shows that there would be some change to the attribute.
- **Major**: Impact shows that there would be a large change to the attribute.

Table 5: Legend for Evaluation of Impacts

Major negative impact	Moderate negative impact	Minor negative impact	Neutral	Minor positive impact	Moderate positive impact	Major positive impact

Elements of Proposed action	Attribute	Description of Potential Impact	Frequency of action	Duration of action	Reversibility of action	Reversibility of change to the attribute	Longevity of change to the attribute	Degree of change to the attribute	Quality of change to the attribute	Evaluation of impact
			Once/intermittent/ continuous	Short-term/ long-term	Reversible/ irreversible	Reversible/ irreversible	Temporary /permanent change	None/negligible /some/large change	Positive/negative change	Neutral/minor/moderate/major impact (negative and positive)
Underground Construction of Three-floors (Total covered area 26.5 acres)	**Site Planning**	Change in the geometric layout planning	Continuous	Long-term	Irreversible	Irreversible	Permanent	Large	Negative	Major negative
	Heritage building (High Court)	opportunity to reduce surface parking abutting the high court, may create foreground for building views	Continuous	Long-term	Reversible	Reversible	Temporary	Some	Positive	Moderate positive
	Artificial mounds	Underground excavation of three floors will change ground levels	Continuous	Long-term	Irreversible	Irreversible	Permanent	Large	Negative	Major negative
	Heterogeneous plantation	Cutting of Trees	Continuous	Long-term	Irreversible	Irreversible	Permanent	Large	Negative	Major negative
	Catchment area (Sukhna Lake)	Construction activities may disturb eco-sensitive zone of Sukhna lake	Continuous	Long-term	Irreversible	Irreversible	Permanent	Large	Negative	Moderate negative
Above - ground Construction of Lift headroom (10 no @ 15'0" height) and Skylights (26 no. @ 6'0" height)	**Historic Urban Layout**	New construction may affect urban layout	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Some	Negative	Moderate negative
	Site Planning	Change in original site levels and aesthetic	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Original Landscape composition	Changes in spatial composition	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Esplanade (Plaza)	Lift headroom and skylights may disturb the spatial experience of plaza	Continuous	Short-term	Reversible	Reversible	Temporary	Negligible	Negative	Neutral
	Imageability & Views	Disturb the original aesthetic of site	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Some	Negative	Moderate negative
	Artificial mounds	Original mounds may disappear	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Heterogeneous plantation	Mew intervention may disturb the flora and fauna	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Catchment area (Sukhna Lake)	Cutting of tress and removing top soil may lead to natural disaster	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative

Elements of Proposed action	Attribute	Description of Potential Impact	Frequency of action	Duration of action	Reversibility of action	Reversibility of change to the attribute	Longevity of change to the attribute	Degree of change to the attribute	Quality of change to the attribute	Evaluation of impact
			Once/intermittent/ continuous	Short-term/ long-term	Reversible/ irreversible	Reversible/ irreversible	Temporary /permanent change	None/negligible /some/large change	Positive/negative change	Neutral/minor/moderate/major impact (negative and positive)
Construction of new ramps (3 no.)	**Original Landscape composition**	Changes in original circulation, walkways, softscape and hardscape and artifical mounds	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Original roads and pathways	Changes in the site orientation and circulation	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Imageability & Views	Disturb the serenity of the site	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Artificial mounds	Change in site topography	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Heterogeneous plantation	Creation of more hard surface would effect on plantation	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Major negative
	Catchment area (Sukhna Lake)	Construction activities could effect on water catchment	Continuous	Long-term	Irreversible	Irreversible	Permanent change	Large	Negative	Moderate negative
New Operation of existing roads roads and pathways	**Esplanade (Plaza)**	May increase no. of visitors causing unwanted crowd in the plaza	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Major negative
	Original roads and pathways	May increase traffic and pollution in the protected area	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Major negative
	Imageability & Views	Increase in traffic movement in the protected area may disturb the site views	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Major negative
	Heritage buildings (High Court, Secretariat Building, Assembly)	New access route may increase people causing disturbance in the protected area	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Moderate negative
	Monuments (The Geometric Hill, Open Hand, Tower of Shadows, Martyrs Monument)	Increase in tourism pressure	Continuous	Long-term	Reversible	Reversible	Temporary change	Large	Negative	Moderate negative

5.1 Results

As evaluated in the table above, most of the actions to be undertaken for the proposed underground multi-level parking will have a negative impact (major and moderate) on the OUV of the Capitol Complex. These proposed actions to construct the multi-level underground parking are long-term, irreversible, and involve continuous actions that will take place every day, are permanent, and involve a large degree of change which is detrimental to the OUV of the WH Site. The negative impact would be significant and could not be avoided or mitigated, so the proposed action should not proceed.

The only positive impact of the multi-level parking project will be that it will create an opportunity to reduce the surface parking abutting the high court, and may create a foreground for building views. A more positive impact could be achieved by selecting an alternate site outside of the core and buffer zone and adjusting the project design for the new site.

6. Mitigation and Enhancement

The alternatives and appropriate mitigation measures are identified in this chapter that ensures the protection of the OUV of World Heritage property against the project of multi-level underground parking. In the case of the WH site of the Capitol Complex, it is suggested to avoid negative impacts which include dismissal of the proposed project of multi-level underground parking and relocation of the proposed action from the core zone of the inscribed property.

6.1 Mitigation Measures

Although it is recommended to not proceed with the proposed multilevel underground parking, in case it is necessary to proceed with the project the following mitigation measures should be considered:

1. **Comprehensive Mobility Plan:** A comprehensive mobility plan is most necessary and urgent before undertaking any further steps as it will help in determining the current need and the appropriate available locations to propose future parking. The plan could also address the existing underground and surface parking. Consideration should be given to the flow of traffic into and out of the area as well as within it. For safety and convenience, pedestrian traffic must also be taken into account when planning.
2. **Traffic Policy:** Before considering any new parking project, traffic policy should be implemented and then the need be assessed again.
3. **Reducing the scale and size of the proposed parking:** The size of the proposed multi-level underground parking should be assessed and reconsidered. Any alternatives to reducing the size of the parking lot and therefore reducing the impact may be considered. These could be explored through creative design and technical solutions.
4. **Selecting a different location:** The new parking could be distributed in several locations to reduce the pressure on a single parcel of land in the core zone.
5. **Geo-technical investigations**: A complete geotechnical investigation and assessment for underground construction should be carried out and the results to be discussed with the stakeholders.
6. **Water drainage system:** A proper comprehensive plan should be developed for the natural water drainage system of the whole complex with special attention to the inscribed areas and new proposed actions.
7. **Detailed Documentation:** All the landscaped areas should be documented as existing within the inscribed property before making any alterations or changes.
8. **Protection of existing landscape:** It should be ensured that any interventions should not disturb the Sukhna eco-sensitive Zone. Any alteration to this will be irreparable.
9. **Redesigning and using advanced technology:** Redesigning the structure focusing on eco-friendly and sustainable options based on the technical expert's consultation. An innovative sustainable design approach could be adopted such as incorporating elements like green roofs which blend into the original landscape. The advice should be sought and followed before taking any action.

6.2 Mitigation Hierarchy

Based on the necessary mitigation measures, a mitigation hierarchy is adapted for the assessment, ranging from the preferred 'avoidance', through 'minimize', 'rectify' and 'reduce' to 'offset'(Image 28). As specified previously, the OUV of the WHS is irreplaceable and cannot be 'offset'. For the WHS of the Capitol Complex, the best is to avoid negative impacts entirely including the dismissal of the proposed project, or its relocation away from the core zone of the inscribed property. If in case, it is not possible to entirely avoid all negative impacts then they should be minimized to acceptable levels that cause no damage to the OUV by opting to reduce impacts and rectification measures.

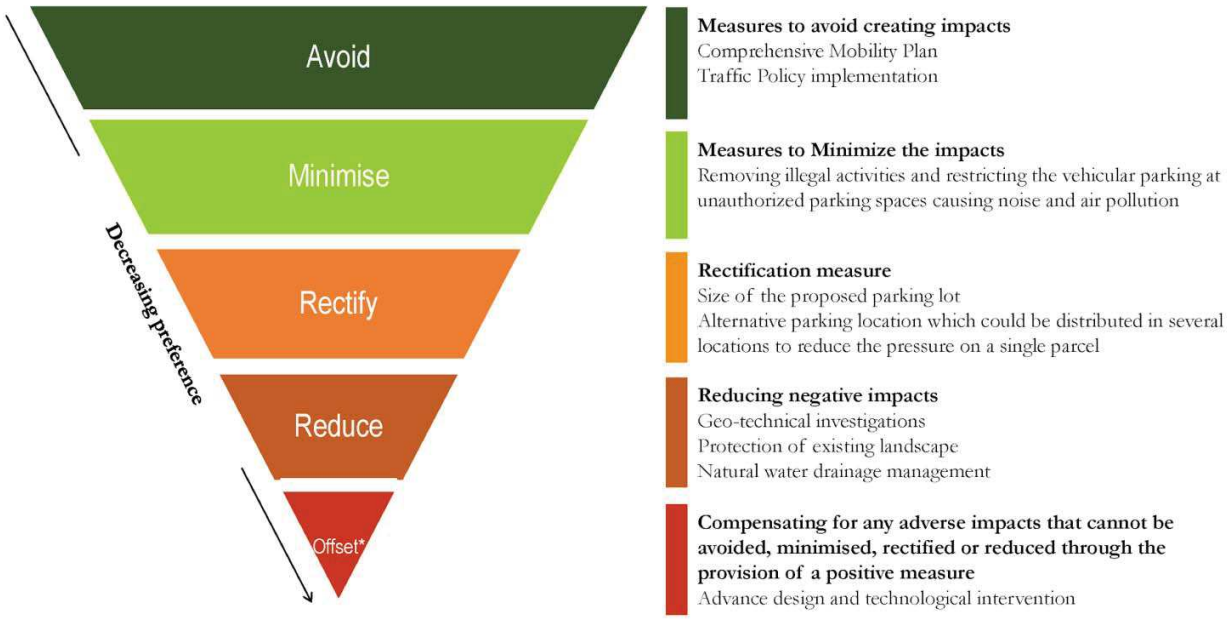

Image 33: Mitigation hierarchy prepared by HIA team

7. Recommendations

In this chapter the recommendations are formed to inform decisions based on the Heritage Impact Assessment of the proposed **Multi-level Underground Parking** project in the WHS, Capitol Complex, Chandigarh.

The WHS Capitol Complex is part of the unique transnational serial property that was chosen based on the fact that the 17 sites together represent outstanding universal values **under the OUV criteria (i), (ii), and (vi).** While keeping in mind the attributes and values of the Capitol complex site, the recommendations are made to protect the OUV of the site which is irreplaceable.

As analyzed the multi-level underground parking project is proposed within the core zone of the inscribed property which is violative of the original concept of the Capitol Complex as conceived by the master architect Le Corbusier. **Therefore, it is recommended that the Multi-level Underground Parking should not be implemented at the proposed location, considering the negative impacts on the Outstanding Universal values of the Capitol Complex, Chandigarh, India.**

Although the site is facing extreme challenges of traffic congestion, and unorganized parking spaces in and around the inscribed property. It is recommended that the mitigation measures should be incorporated into the site management plan before proceeding and proposing any further changes in the core as well as the buffer zones of the Capitol Complex. The recommended technical investigations need to be followed even before planning any further action for implementation.

8. Follow-up

This chapter summarizes follow-up actions to be taken up based on the recommended mitigation measures. The following table presents the recommended activities that need to happen and the responsible stakeholder to be involved.

Table 7 : Follow- up Activity

Activity	What needs to happen?	Who is responsible?
Comprehensive mobility plan (CMP)	Plan based on the traffic studies, alternative parking, organizing existing parking routes	Chandigarh Administration
Traffic policy implementation	Management and monitoring	Chandigarh Administration
Structural assessment	Geotechnical investigation	Chandigarh Administration
Environmental Impact assessment	Natural drainage of surface water, Existing landscape and site contours mapping	Chandigarh Administration
Buffer Management Plan	Removal of illegal activities, Adhoc structures in the buffer zone, organizing the unplanned parking	Chandigarh Administration
Enforcement of regulations & laws	The strict measure to be adopted for enforcement of laws and regulation	Chandigarh Administration CHCC World Heritage Committee Advisory Bodies (ICOMOS)
Monitoring	Timely monitoring is required for any actions to avoid threats from development pressure, natural disaster and environmental degradation	CHCC Chandigarh Administration

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10. Annexure

1) Minutes of Meeting with Stakeholders (Chief Architects and Chief Engineer of Chandigarh administration)
2) Minutes of Meeting with representatives of FLC (Foundation Le Corbusier) and CCA (Chandigarh college of Architecture)
3) Stakeholder Survey (Google Form Questionnaire and Responses)

Minutes of Meeting – HIA, Capitol Complex, Chandigarh
Prepared by HIA Team (Ms. Bhawna Dandona and Ms. Bhavya Ahuja)

Date: 09.09.2022
Agenda -1: Visit to the Proposed Project Sites in Capitol Complex, WHS
Location: Capitol Complex, Chandigarh

Attendee –

1. Dr. Arman Singh - Sub Divisional Engineer, Engineering Department, Chandigarh Administration
2. Ms. Bhawna Dandona - Conservation Architect (HIA Team)
3. Ms. Bhavya Ahuja - Conservation Architect (HIA Team)
4. Ms. NSV Pravallika - Architect Intern (HIA Team)

The site for the proposed projects was inspected concerning the WHS core area and Buffer Zone of the Capitol Complex. Each project site was shown and explained to the HIA team by Dr. Arman Singh. The visit started at the Tourist Information Center followed by the High court and its surrounding buildings. The existing situation of parking problems and existing parking areas were assessed.

Dr. Arman informed us that some area of the proposed site for multi-level underground parking is already in use by the litigants (public). The proposed site area was inspected by the HIA team.

The HIA team reflected on the need to understand the existing situation to carry out the impact assessment. It was requested that a site survey plan should be provided. The survey plan and cross-section of the site would help to determine the site levels, existing buildings, existing trees, and its surrounding areas.

During the visit, the site for the holistic development of high court extension was assessed. It was informed that the existing basement parking behind the high court doesn't provide enough space for the parking of officials and personnel. The building was constructed in 2011 to provide an additional parking area.

Currently, there are concerns about the parking space for the litigants and general public. Therefore, multi-level underground parking is proposed to meet the increasing parking requirements. The proposed site for multi-level underground parking is within the core area of WH property.

There are also a few illegal constructions by the bar association within the core area and buffer zone of WH property which is abutting the high court building. In past years, many Adhoc activities have taken place due to insufficient regulation on the site and improper parking spaces.

In addition, the site for HVAC ancillary structures near the secretariat building was inspected during the visit. Dr. Arman informed that the area for the chiller plant has been marked on the site.

The information collected during the site visit was very productive, as it helped to understand the current activities being undertaken at the site. This will further be cross-referenced with technical data to carry out the heritage impact assessment.

Agenda – 2: Meeting with Chief Architect, U.T., Chandigarh
Location: UT Secretariat (Deluxe) Building, Sector 9D, Chandigarh

Attendee –

1. Mr. Kapil Setia - Chief Architect, U.T. Chandigarh
2. Mr. Rajiv Mehta - Senior Architect, U.T. Chandigarh
3. Mr. Ashwani Sharma - Assistant Architect, U.T. Chandigarh
4. Ms. Bhawna Dandona - Conservation Architect (HIA Team)
5. Ms. Bhavya Ahuja - Conservation Architect (HIA Team)
6. Ms. NSV Pravallika - Architect Intern (HIA Team)

After the Site visit, a meeting took place with the Chief Architect, Mr. Kapil Setia, to discuss the concerns of HIA project and data required for the assessment.
The HIA team shared the feedback from the site visit with Mr. Setia. The present site scenarios were discussed regarding the proposed multi-level underground parking project. It was mentioned by Mr. Setia that the parking problem is a rather larger issue of the city for which traffic studies have been proposed. There is a proposal for MRT and BRT corridors to strengthen public transport within the city that extends until the capitol complex. He mentioned that the parking policy was also prepared by the Chandigarh administration to solve city parking problems. He also mentioned a CMP (comprehensive management plan) study to be undertaken in the future for mobility.
The HIA team discussed the concern regarding the Sukhna eco-sensitive zone (SESZ) that covers the protected area of the Capitol Complex. Mr. Setia informed that the holistic development of the High court extension would need to be carefully looked at as it is under the water catchment area. The construction activities are restricted in the eco-sensitive zone.
In addition, the proposed multi-level underground parking comes within the core area of inscribed WH property. These two concerns should be addressed in the heritage impact assessment.
The HIA team requested the available data from previous site documentation. The architect's office team provided the necessary documents.
The following documents were given to the HIA team

1. Draft Landscape Report
2. Site Management Plan
3. Proposed Holistic development plans
4. HIA report on holistic development of High Court
5. Lidar Survey map of the Site

Way forward
The HIA team would assess the collected data and prepare the HIA report on proposed project-1 i.e. Multi-level underground parking by October 1, 2022. The timely consultation with stakeholders will take place during the process of the HIA report.

Minutes of Meeting – Heritage Impact assessment for the World Heritage Site, Capital Complex, Chandigarh
Date: 30.09.2022
Place: Online Google Meeting

Agenda – Review of the HIA draft report and feedback from the representatives

Attendee –

1. Ms. Benedicte Gandini, Conservation Architect, Le Corbusier Foundation (FLC)
2. Dr. Sangeeta Bagga, Principal, Chandigarh College of Architecture
3. Ms. Saumya, Assistant Professor, Chandigarh College of Architecture
4. Ms. Monica, Assistant Professor, Chandigarh College of Architecture
5. Ms. Bhawna Dandona, Conservation Architect (HIA Team)
6. Ms. Bhavya Ahuja, Conservation Architect (HIA Team)

Dr. Bagga initiated the meeting and introduced, Ms. Benedicte Gandini to all meeting members. She mentioned that Ms. Gandini is responsible for the reports for managing the transnational serial WH properties of "The Architectural Work of Le Corbusier" including the WHS Capitol Complex, Chandigarh. She introduced the HIA team to Ms. Gandini, who are appointed to prepare the HIA report for assessing the proposed developments in the WHS Capitol Complex.

The meeting was followed by an introduction from all team members.

Dr. Bagga reflected that out of three proposed projects in the Capitol Complex, initially the first project is considered for the Heritage impact assessment

1. **Multi-level underground parking**
2. High court Extension
3. HVAC ancillary structure.

Ms. Bhawna mentioned that the HIA report is being prepared based on the Guidance and toolkit for impact assessment by UNESCO, ICCROM, ICOMOS, and IUCN. The report focuses on the assessment of the project of **Multi-level underground parking** that is proposed towards the southern edge of the core zone of the inscribed WH property.

The HIA team presented the draft report to the members. The content of HIA, its methodology, the background studies and the process of impact evaluation were discussed[1]. The team mentioned that the report is based on the data provided by the Chandigarh administration and stakeholder's feedback during the meetings and site visit. The opinions of local stakeholders are gathered through a Google questionnaire to ensure transparency and inclusivity in the assessment. The responses will be included in the HIA report.

[1] The details can be refereed in the draft HIA report.

The HIA team mentioned that the report includes background of the project, site introduction, evolution of the site since the 1950s and the present state of conservation. In every chapter, the key inferences have been drawn as an outcome of each chapter to make it more convenient for the reader.

The HIA team emphasised that the protection of Outstanding Universal Value and other heritage values of the WHS Capitol complex are intended to protect against the new developments. The tangible and intangible attributes are identified which form the basis of this assessment.

Remarks by Ms. Benedicte – The OUV of the whole transnational series of inscribed properties along with the Capitol complex site should be considered. The transnational values of 17 WH sites are the basis of this complete serial nomination of "The Architectural Work of Le Corbusier".

HIA team noted the remarks and presented further details on the proposed project, identification of potential impacts whether negative or positive and then evaluation of the impacts. The thorough assessment by cross-referencing the proposed actions and impacts forms the basis of future actions that need to be considered to avoid severe negative impacts.

During the discussion few points were highlighted by the HIA team and feedback received

1. **The High Court caters to a large no. of people and there is an urgent need to address the parking problem in the WHS** – Three scenarios have been assessed and compared in the HIA report (No project, alternative project and proceeding with the project)

   We need a pragmatic approach to decongest the High Court to find long-term solution. Due to the increasing inflow of general public coming from nearby states, the site is facing challenges in the parking of private vehicles. The decongestion could be done in several ways such as splitting the High Court activities and moving a few activities to the other courts in the City.

2. **The existing parking in the WHS is already impacting the values of WHS** – The mitigation measure are recommended in the report based on the assessment of the existing situation

3. **The core zone boundary is abutting the edge of the High Court building** –Therefore, no regulations can be applied over the ad-hoc additions and traffic congestion.

   The core zone boundary was defined after the consultation with various stakeholders. It was important to include the High Court building in the WH inscription which was possible after several efforts. The area surrounding the high court has the maximum concentration of developments.

4. **During the nomination process, the core zone boundaries were revised and included the southern parcel of the Capitol Complex** - The site is currently used as surface parking and is being proposed for a multi-level underground parking project.

5. **The inscribed site of the Capitol complex is in the Eco-sensitive Zone –** The new construction may have negative impacts and cause environmental degradation.

   For the Eco-sensitive Zone, the Chandigarh administration is connecting with the Survey of India (The National Survey and Mapping Organization) to obtain the contour map of the site. This additional information may help to understand the site situation.

Remarks by Ms. Benedicte – It is very important to analyse the difficulties in the WH site. Looking at the urgency of parking and cars everywhere on the site, it is necessary to come up with solution but the proposed project of multi-level underground parking is not the ultimate solution.

Furthermore, the HIA team suggested that the mitigation measures included in the report can be considered to manage the buffer zone areas based on the comprehensive studies of the site and surroundings.

It was agreed that the draft report will be shared with all concerned members for them to further read the HIA report in detail. Their feedback will be incorporated into the final report.

After the discussions, the meeting members appreciated the contribution made by the HIA team to the assessment. The meeting ended on a positive note.

Way forward

The HIA team will add the feedback provided in the meeting and will share the draft of HIA report with members of Chandigarh Administration, Le Corbusier foundation, Director Cultural Affairs and Principal, Chandigarh College of Architecture on Monday i.e. 03.10.2022

Heritage Impact Assessment (HIA)

Heritage Impact Assessment of the Capitol Complex, Chandigarh, WHS.
This questionnaire is prepared to assess impacts of Proposed project of **Multi-level (3-storey) underground parking** within the core areas of the inscribed property of World Heritage site, Capitol Complex, Chandigarh. This assessment is to support the protection and management of heritage site against new constructions and development. The response can further contribute to mitigation strategies and decision-making for safeguarding the World heritage site.

*Required

Image-1 showing the location of Proposed Project (Three- levels underground Parking)

1. Name

2. Profession *

3. Age *

4. Place *

5. Are you familiar with the proposed project in the Capitol Complex, UNESCO World Heritage Site? *

Mark only one oval.

- ( ) Yes
- ( ) No

6. Are you aware of the area and surroundings of the proposed project. (Ref. Image) *

Mark only one oval.

- Yes
- No

7. Is an impact assessment needed for WHS Capitol Complex? *

Mark only one oval.

- Yes
- No

8. Is the proposed project of **Multi-level underground parking** necessary? Is it preferable to 'do nothing'? *

Mark only one oval.

- Yes, It is necessary
- No , It is not necessary and preferable to 'do nothing'
- Maybe

9. Are there opportunities to provide or enhance any positive impacts through the proposed project? *

Mark only one oval.

- Yes
- No
- Maybe

10. Could the proposed project have any negative impact, alone or jointly with other projects, on the OUV (Outstanding Universal Value) or other heritage/conservation values of the World Heritage Site? *

Mark only one oval.

- Yes
- No
- Maybe

11. In your opinion, Is there a more appropriate place for the proposed project of Multi-level (3-storey) underground parking ? *

Mark only one oval.

- Yes
- No
- Maybe

12. What are the alternatives to the proposed Project? Please share your suggestions here.

Thank you for your time. You have made valuable contribution to the assessment.

Profession

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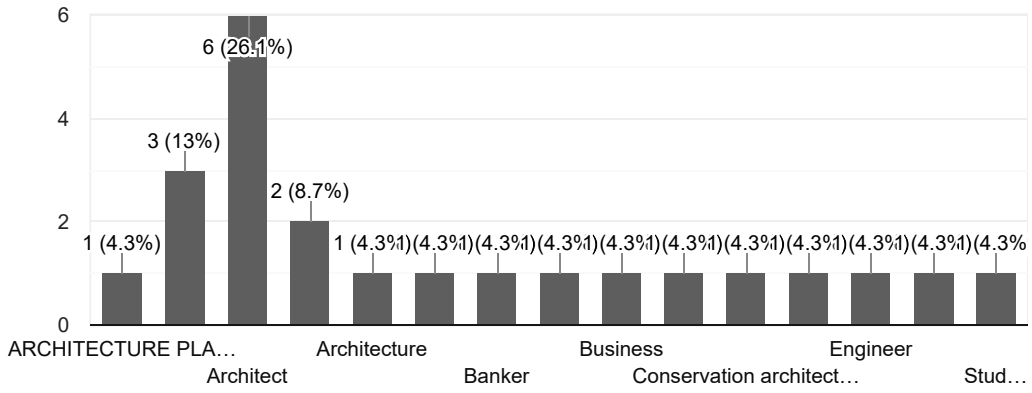
23 responses



Age

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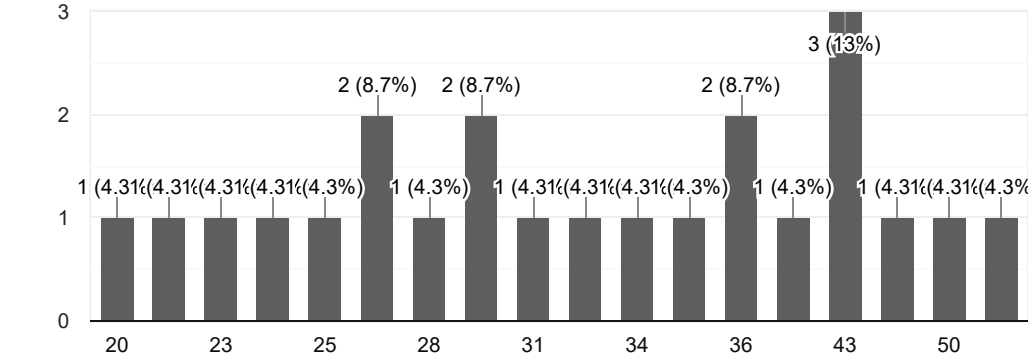
23 responses



Place

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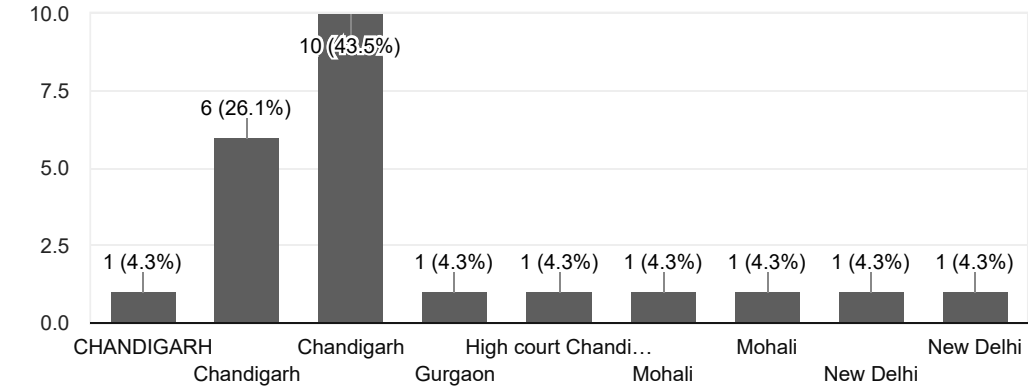

Are you familiar with the proposed project in the Capitol Complex, UNESCO World Heritage Site?

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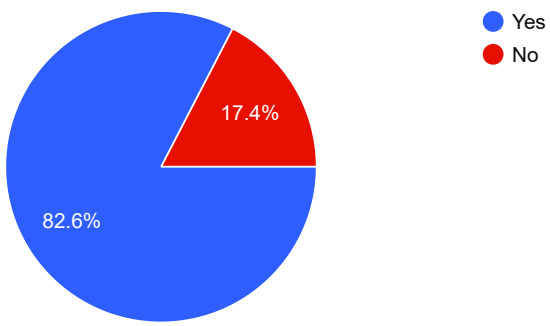
23 responses



Are you aware of the area and surroundings of the proposed project. (Ref. Image)

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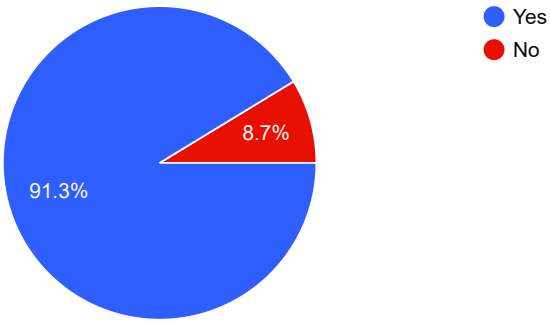
23 responses



Is an impact assessment needed for WHS Capitol Complex?

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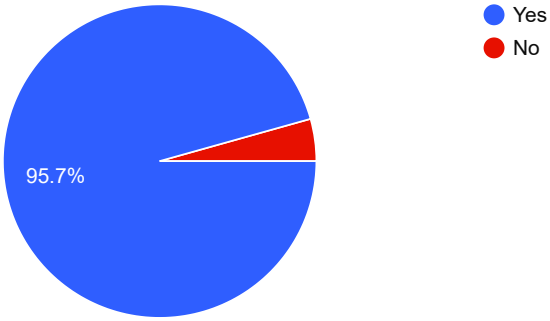
23 responses



Is the proposed project of **Multi-level underground parking** necessary? Is it preferable to 'do nothing'?

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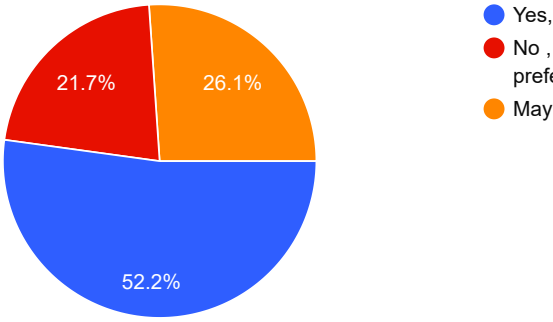
23 responses



Are there opportunities to provide or enhance any positive impacts through the proposed project?

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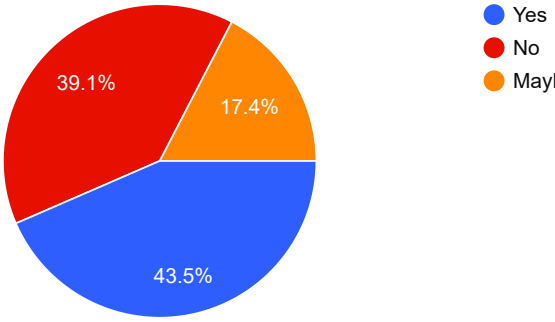
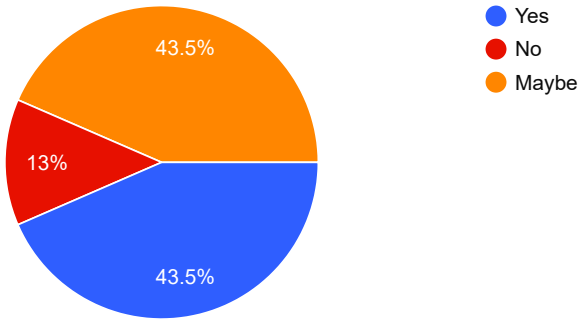


Could the proposed project have any negative impact, alone or jointly with other projects, on the OUV (Outstanding Universal Value) or other heritage/conservation values of the World Heritage Site?

Copy

23 responses



In your opinion, Is there a more appropriate place for the proposed project of Multi-level (3-storey) underground parking ?

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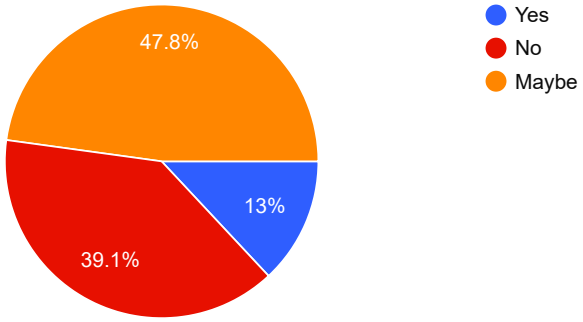
23 responses



What are the alternatives to the proposed Project? Please share your suggestions here.

10 responses

Instead of providing multilevel parking, pooling of cars and public transportation must be encouraged This not only will reduce the traffic but also help in controlling the pollution and saving of fuel.

no nearby place to construct such huge parking

The proposed site by Deptt is best and suitable and it's need of hour due to increase of vehicular in Tri-City

This project is need of hour

Dedicated parking in open area nearby.

Entry of private vehicles should be banned. Only advocates with authorised stickers should be allowed to enter the premises. Public & police personnels should use Public transportation facilities only.

Make a parking more towards the round about entrance and public transport takes the public to the court complex. Stopping the vehicular entry to the complex except for judges will help in retaining the stature of the heritage building.

There is no need to disturb the WHS, infact it is to be called heritage due to its present condition which is quite good.

Chandigarh should meet its challenges through redevelopment and better utilisation of land resources. It's been a virus in some elites just to halt developmental projects in the name of heritage. These are necessary otherwise Chandigarh will be soon known as a failed City.

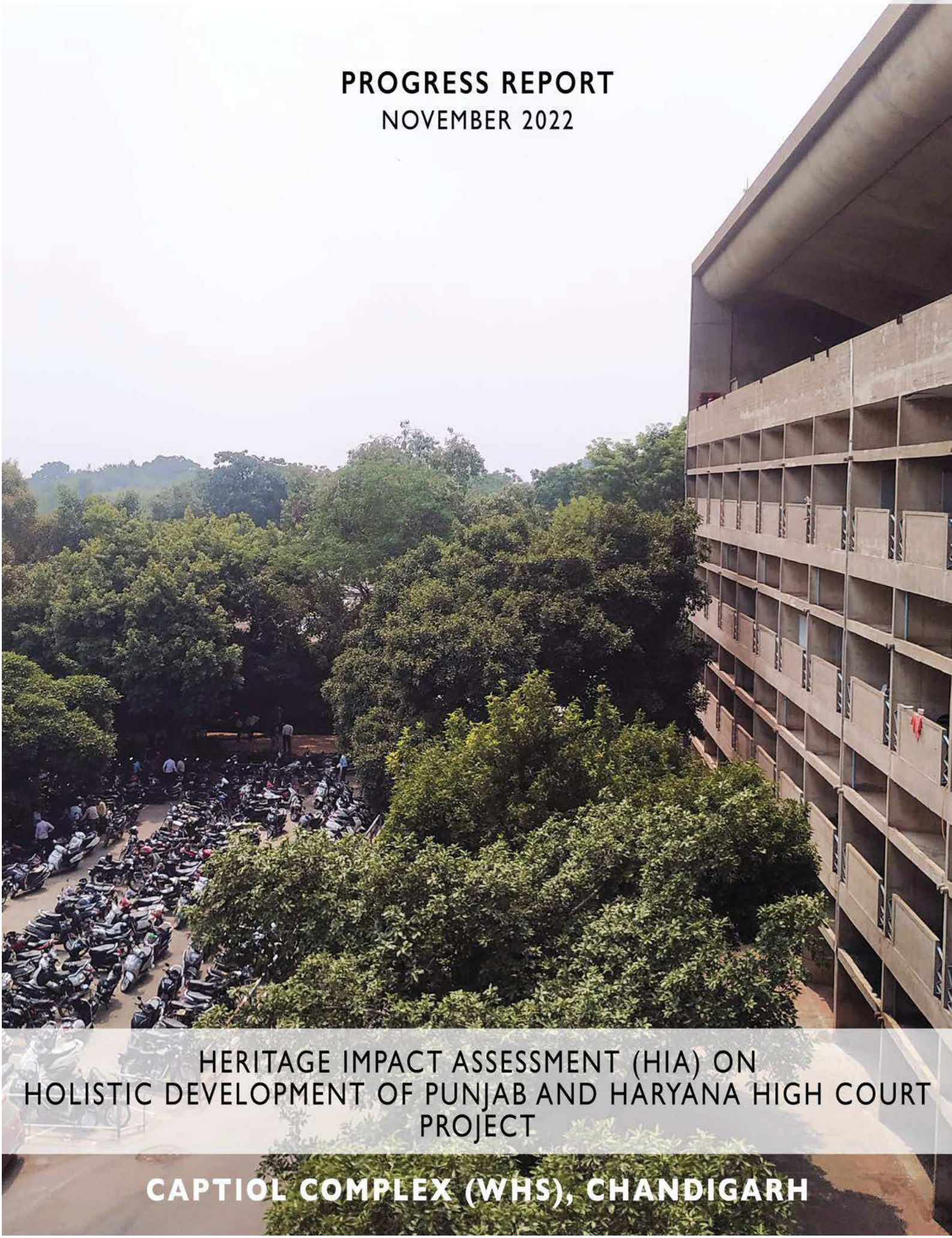
Site should be chosen keeping in mind that no trees are cut in the Eco sensitive area. However, the current site accommodates a dense forest cover and it will be better to choose a site with minimum forest cover available in the capitol complex, even if it increases the distance of parking from the Hight court complex. Alternate measures shall be adopted to decrease the number of car parkings required, which could be done by improving the public transport connectivity to the High court.

Thank you for your time. You have made valuable contribution to the assessment.

HERITAGE IMPACT ASSESSMENT

PROGRESS REPORT

NOVEMBER 2022



HERITAGE IMPACT ASSESSMENT (HIA) ON
HOLISTIC DEVELOPMENT OF PUNJAB AND HARYANA HIGH COURT PROJECT

CAPTIOL COMPLEX (WHS), CHANDIGARH

HERITAGE IMPACT ASSESSMENT

Progress Report

November, 2022

HERITAGE IMPACT ASSESSMENT (HIA) REPORT ON
HOLISTIC DEVELOPMENT OF PUNJAB AND HARYANA HIGH COURT

CAPITOL COMPLEX (WHS), CHANDIGARH

Prepared for:
Engineering Department,
Union Territory, Chandigarh

In consultation with
Chandigarh College of Architecture (CCA)

Prepared by:
Bhawna Dandona (Conservation Architect)
Bhavya Ahuja (Conservation Architect)

Table of Contents

Executive Summary

The Heritage Impact Assessment report is prepared to assess the proposed project of **"Holistic Development of the Punjab and Haryana High Court"** in the World Heritage Site (WHS) of the Capitol Complex, Chandigarh, India. It is a stand-alone report commissioned by the Engineering department, Chandigarh Administration based on the request made by the World Heritage Committee. The assessment is carried out by the conservation architects, Bhawna Dandona and Bhavya Ahuja with the support of Chandigarh College of Architecture.

The report has been prepared to inform decisions to managing authorities keeping in mind to protect the Outstanding Universal Value (OUV) of the WHS Capitol Complex as part of the unique **transnational serial property of *The Architectural Work of Le Corbusier*.** The purpose of this assessment is to evaluate the proposed development in terms of its potential impacts on the existing resources included in the core and buffer zones of the World Heritage Site of the Capitol Complex, Chandigarh.

The methodology is based on the resource manual, Guidance and Toolkit for Impact Assessment in a World Heritage context by UNESCO, ICCROM, ICOMOS, and IUCN. The background information and baseline assessment data sets the context of the WH Site Capitol Complex to assess the foreseeing impacts of future developments. In addition, the assessment includes valuable inputs from key stakeholders.

The results of the assessment show that in order to avoid the very serious major negative impacts on the OUV of the WHS, it is best to avoid the project of **"Holistic Development of the Punjab and Haryana High Court"** that is proposed in the buffer zone in close proximity of the High Court.

Finally, this Heritage Impact Assessment report addresses the impacts of the **"Holistic Development of the Punjab and Haryana High Court"** project. The HIA of two more projects i.e. Multi-level underground parking and HVAC (Ancillary Structures) have been carried out individually. It is suggested that the impacts of all three proposals should be considered jointly for the long-term protection of WHS of Capitol Complex.

Acknowledgments

The Heritage impact assessment report for the proposed **"Holistic Development of the Punjab and Haryana High Court"** project was made possible with the support of the Engineering department and Department of urban planning, U.T., Chandigarh.

We would like to thank Mr. C.B. Ojha, Chief Engineer and Dr. Arman Singh, Sub Divisional Engineer, Engineering Department, Chandigarh Administration, for their support and for sharing the project details to carry out the assessment.

We would like to thank the Chief Architect, Kapil Setia (Department of Urban Planning U.T. Chandigarh Administration) for providing us with the data to carry out the impact assessment and for sharing the perspectives on the current issues of the site.

We would like to extend our special thanks to Dr. Sangeeta Bagga, Principal, Chandigarh College of Architecture (CCA) for the generous support provided throughout the assessment. We thank Assistant Prof. Saumya and Assistant Prof. Monika at CCA, for giving their inputs during our meetings.

We thank Ms. Benedicte Gandini, Conservation Architect, FLC for her time and inputs.

We would like to extend gratitude to the stakeholders who participated in the survey carried out through Google form, the assessment benefited from their contribution.

Team

Bhawna Dandona, Conservation Architect
Bhavya Ahuja, Conservation Architect
Mrinalini Singh, Conservation Architect, MDL
Pravalika Neti, Architect, MDL

Abbreviations

CHCC Chandigarh Heritage Conservation Committee

CMP Comprehensive Mobility Plan

ESZ Eco-sensitive Zone

HIA Heritage Impact Assessment

ICCROM International Centre for the Study of the Preservation and Restoration of Cultural Property

ICOMOS International Council on Monuments and Sites

IUCN International Union for Conservation of Nature

OUV Outstanding Universal Value

UNESCO The United Nations Educational, Scientific and Cultural Organization

SOC State of Conservation

SMP Site Management Plan

WHC World Heritage Committee

WHS World Heritage Site

1. Introduction

The Capitol Complex, Chandigarh in India was inscribed in the UNESCO World Heritage List as part of the **transnational serial property** under the title of **"The Architectural Works of Le Corbusier"** which represents an outstanding contribution to the Modern Movement".

Since the inscription, site management plans, and holistic development plan have been prepared which include the proposals for new construction and infrastructural development within the Core zone of the inscribed WH Site. However, the UNESCO World Heritage Committee and its advisory non-government organization for World Cultural Heritage Sites ICOMOS expressed concerns that the new projects could jeopardize the integrity of the World Heritage property. Therefore, a decision was made to carry out a Heritage Impact Assessment (HIA) to evaluate the positive and negative effects of the projects on the Outstanding Universal Value (OUV) of the World Heritage Site.

The proposals include the following new projects:

1. HVAC (Ancillary Structures)
2. Holistic development of the Punjab and Haryana High Court (High Court Extension)
3. Multi-level Underground parking

This HIA addresses the impact of the "Holistic Development of the Punjab and Haryana High Court" project proposed in the buffer zone of the inscribed property of the Capitol Complex. The independent impact assessment is commissioned by the Chandigarh Administration.

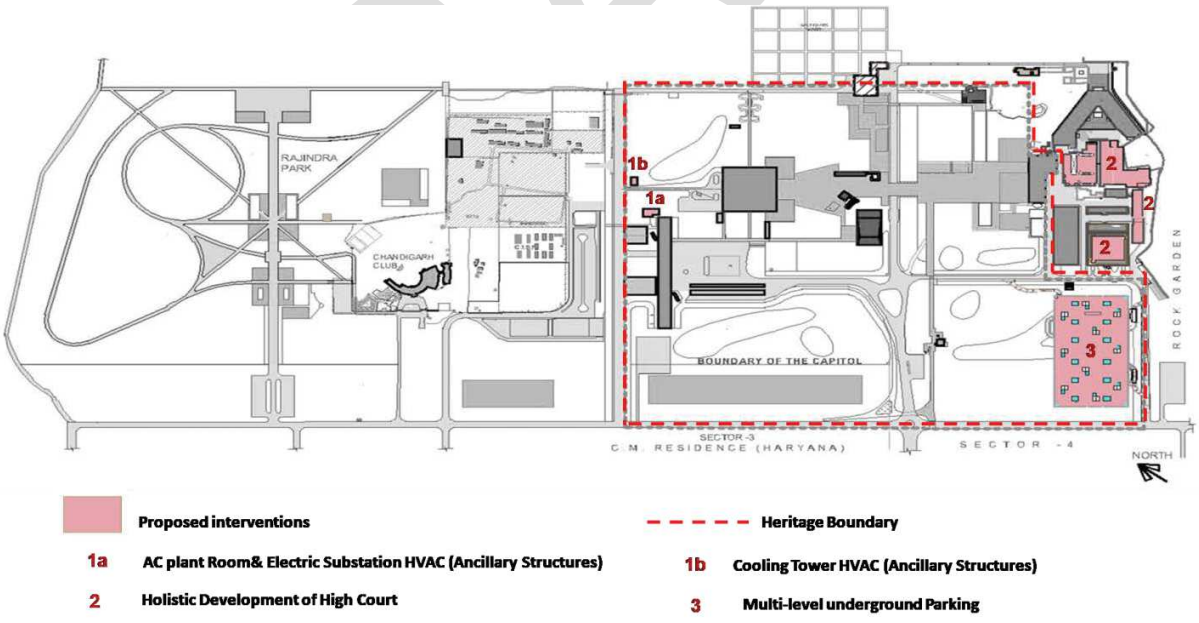


Image 1: Plan of the Capitol complex showing proposed projects © SOC, 2020

1.1 Need for Heritage Impact Assessment (HIA)

The Heritage Impact Assessment is based on decisions adopted at the 42nd and 44th sessions of the World Heritage Committee in 2018 and 2021, and on the following grounds that

1. In 2014, The Registrar General of Punjab & Haryana High Court invited participation in an Architectural Competition for the **Holistic development of the High Court**. The entry by Satnam Namita associates was selected by the authorities for the proposed project.
2. In 2017, the State Party mentioned that a comprehensive plan for the High Court extension located in the buffer zone is under preparation to meet the requirement of additional work space and to accommodate the functions of the High Court. The holistic planning has been undertaken with the involvement of the Members of the CHCC to ensure harmonious development.[1]
   The WHC encourages state parties to introduce the Heritage Impact Assessment procedures for proposed development at all component sites.
   In 2018, HIA report was prepared by the Abha Narain Lamba Associated for the project **Holistic development of the High Court.**
3. At the 40th session the WHC noticed that although impact assessments of individual proposals are undertaken at the level of component sites, Heritage Impact Assessments (HIAs) are not used in line with the ICOMOS Guidance on HIAs for Cultural World Heritage Properties as the impact is only assessed on the components rather than on the whole series, encourages the States Parties to strengthen approaches to impact assessment through using HIAs and through ensuring impacts are considered against the Outstanding Universal Value (OUV) of the series[2].
4. In 2020, state party mentions that "a major intervention in form of the above mentioned project has been proposed keeping in view the demands from the Honorable High Court authority. The Holistic Development proposal is prepared for an area of 3.21 lakh sq.ft on eastern side of the High court. The site lies in the buffer zone but abuts the rear elevation of the High Court. The proposal consists of office spaces such as Judicial Branches, General Branches, Court Rooms, Chambers, Lawyers' Chambers/ Bar room and a parking provision for 3500-4000 four wheelers and 2500-3000 two wheelers.[3]
5. In 2021, at 44th extended session of WHC requested "the State Party of India to submit any additional available information on the Heating, Ventilation, and Air-Conditioning (HVAC) Ancillary Structure, **the "Holistic development of the Punjab and Haryana High Court"** and the multi-level basement parking projects, by 1 February 2022 for review by the Advisory Bodies, and to develop an HIA to assess the potential individual and cumulative impacts of all planned developments within the boundaries and buffer zone of the Capitol Complex, including the multi-level parking structure, and to submit it to the World Heritage Centre for review by the Advisory Bodies along with the project documentation; and also encourages the State Party of India to finalize the Conservation Plan for Chandigarh."[4]
   Based on the decisions the Chandigarh Administration is conducting the HIA for the proposed projects.

[1] "State of Conservation Report," 2017.
[2] "UNESCO World Heritage Centre - Decision - 42 COM 7B.18."
[3] "State of Conservation Report," 2020.
[4] "UNESCO World Heritage Centre - Decision - 44 COM 7B.152."

Since the WH inscription, the new project proposals have been pondered and it has gone under consideration from various authorities. The following timeline is prepared to present the stages of management of the WH site Capitol Complex. The important events are highlighted related to the impact assessment of the proposed projects.

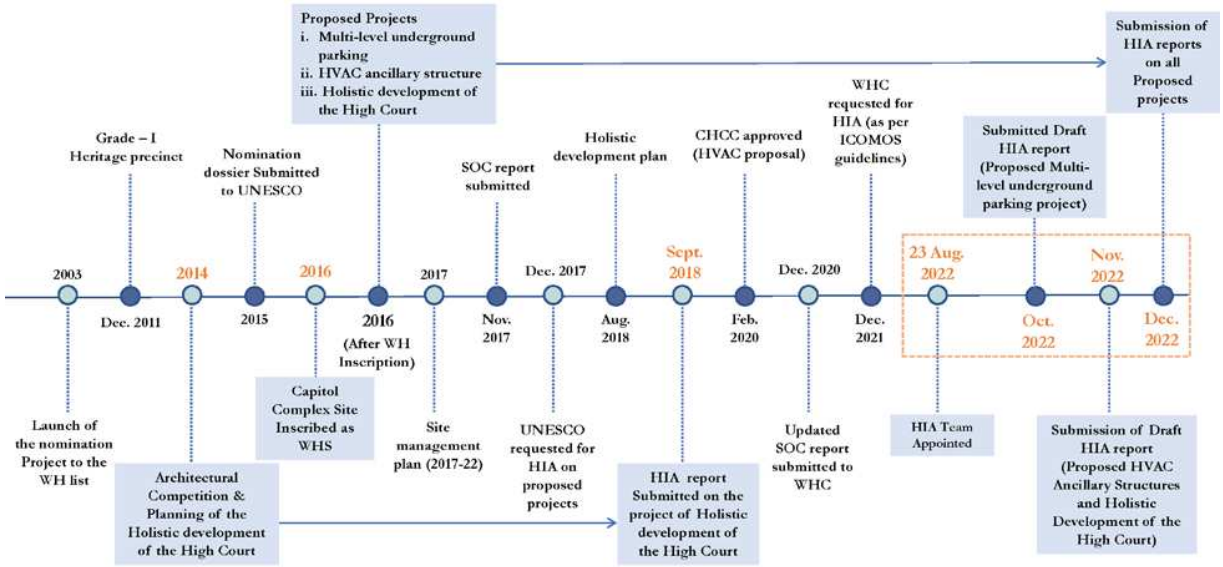


Image 2: Chronology of Events © HIA Team

S.no.	Date	Events
1	2003	Launching of the nomination project to the World Heritage List
2	23 Dec. 2011	Grade I Heritage precinct
3	2014	Launch of the Architectural Competition & selection of architectural firm for the Holistic development of the High Court
4	2015	Nomination dossier Submitted to UNESCO
5	2016	Inscribed as WHS
6	2016 (after inscription)	Project proposal for (Holistic development plan High court extension, multi-level underground parking, and HVAC ancillary structures)
7	2017	Site management plan prepared for five years (2017-2022)
8	Nov. 2017	SOC report Submitted to WHC
9	Dec. 2017	WHC requested for HIA
10	Aug 2018	Holistic development plan of High Court Extension
11	Sept. 2018	HIA submitted for Holistic development plan of High Court Extension
12	Feb. 2020	CHCC approved the proposal of (HVAC Ancillary Structures)
13	Dec. 2020	Updated SOC Report
14	Dec. 2021	WHC requested for HIA as per ICOMOS guidelines
15	June 2021	Landscape assessment report
	23 Aug. 2022	HIA team appointed
16	Oct. 2022	Submitted HIA report (Multi-level underground parking project)
	Nov. 2022	Submission of HIA report on HVAC (Ancillary Structures) & Holistic development of High Court Extension
17	Dec. 2022	Updated SOC and HIA reports to be Submitted

1.2 Objective of Heritage Impact Assessment (HIA)

The overall objective of the heritage impact assessment is to preserve and sustain the OUV of the WHS Capitol Complex through sensitive and compatible actions while continuing to develop the site with the utmost care for its future.

The broad objectives are:

- To evaluate from an unbiased perspective the effects of the proposed project on the OUV of the WHS of the Capitol Complex. In case of negative influences, the plan is to develop recommendations on how to reduce or rectify or avoid such influences.
- To carry out direct, meaningful and useful field based studies that will have a practical application in future planning and implementation.
- To provide measures to avoid or minimize the expected damage that may occur due to proposed HVAC system.

1.3 Methodology for Heritage Impact Assessment (HIA)

The structure and content of the HIA is built on data collection, archival research, available literature and guidelines, site management plans, and site, and building studies. The HIA is prepared in accordance with the **Guidance and toolkit for impact assessment** developed by UNESCO and the advisory bodies to the World Heritage Committee, ICCROM, ICOMOS, and IUCN. The guidance was published in 2022. The methodology used for the impact assessment is in line with the Guidance.

The methodology adopted for the Heritage Impact Assessment:

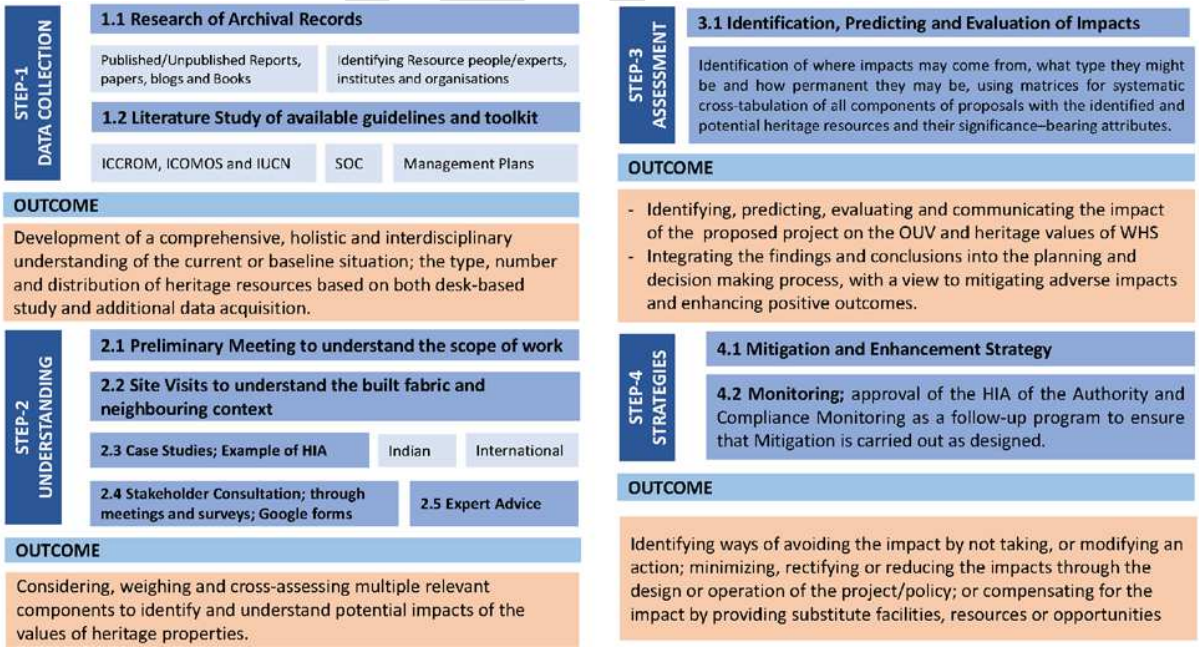


Image 3: Methodology Framework © HIA Team

1.4 Stakeholders

The stakeholders of the WHS Capitol Complex are identified at four levels: international, national, state, and local. The key stakeholders were involved in the assessment starting from the preliminary discussions (representatives of the Chandigarh administration, Chandigarh College of Architecture, and locals).

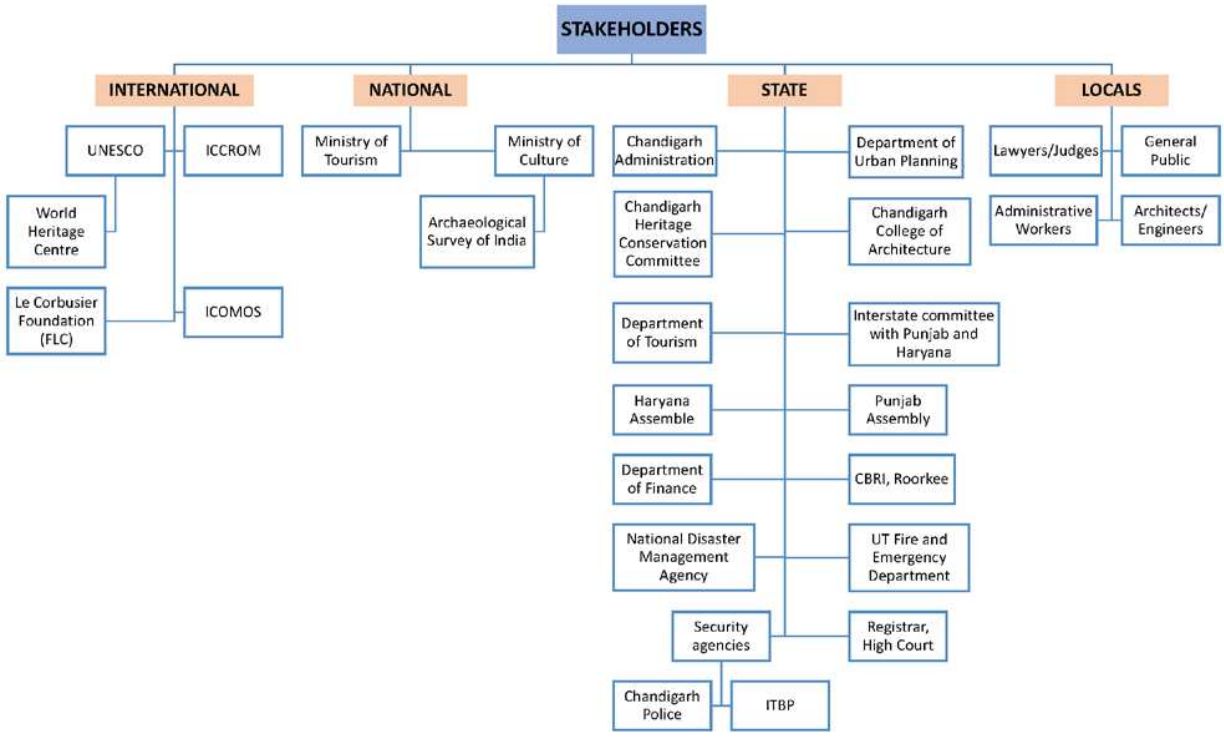


Image 4: Stakeholders flowchart © HIA Team

The scope of HIA, its content, framework, and timeline were prepared in consultation with stakeholders to carry out the impact assessment. The Chief Architect and Chief Engineer of the U.T. Chandigarh Administration were requested to provide baseline data that served as a basis for this assessment. In addition, the principal of Chandigarh College of Architecture was consulted throughout the process of assessment.

The HIA process was carried out with public participation. During the assessment, a Google form was prepared with a questionnaire addressing the need for HIA for the proposed projects in the Capitol Complex. The questionnaire was shared with local stakeholders in order to facilitate transparency and inclusivity. This encouraged the general public to put forward their opinions on the proposed projects.

2. Baseline Assessment

The data on the inscribed property of the Capitol Complex, its OUV, state of conservation, and protection instruments are used as a baseline for the impact assessment stages which further compares the future of the site with or without the proposed project.

This chapter will discuss the boundaries of the inscribed property and buffer zone followed by a critical analysis. The breakdown of OUV, other heritage/conservation values and attributes are included in this chapter which is further leading to the identification and evaluation of the potential impacts of the proposed action.

The following sources are referred for baseline assessment:

S.no.	Sources referred	Source of Information
1.	Nomination dossier	UNESCO
2.	State of Conservation Reports (SOC, 2018, 2020)	UNESCO
3.	Reports of Decisions adopted at WHC	UNESCO
4.	Archival drawings and images	Foundation Le Corbusier and Canadian Centre for Architecture (CCA Archives)
5.	Nomination documents on the series	Foundation Le Corbusier
6.	Site survey plans	Engineering Department and Department of Urban Planning, Chandigarh Administration, U.T.
7.	Proposed project drawings	
8.	Site Management Plan	
9.	Landscape assessment Report	
10.	Holistic development plan of High Court	
11.	HIA report on holistic development of High Court	
12.	Lidar Survey Plan of Site contours	
13.	Urban studies and survey plans	Chandigarh Master Plan_2031
14.	On Site and building studies	HIA Team
15.	Stakeholder's consultation	HIA Team

2.1 The Capitol Complex World Heritage Site

In 2016, at the 40th session of the World Heritage Committee in Turkey, the Capitol Complex at Chandigarh site was inscribed under the board umbrella of transnational serial properties. The site was included in the list of "The architectural works of Le Corbusier" chosen among the 17 sites that are spread over 7 countries and 3 continents.

The Capitol Complex in Chandigarh is a unique and outstanding example of Le Corbusier's contribution to the creation of new types of public buildings. This is one of the most monumental compositions of modern town planning, a major contribution to the Corbusian heritage resulting from a unique geopolitical and cultural context. The three buildings of the Capitol Complex are considered the most accomplished plastic ensemble where he is at the same time architect, artist, and sculptor (Nomination dossier, 2015).

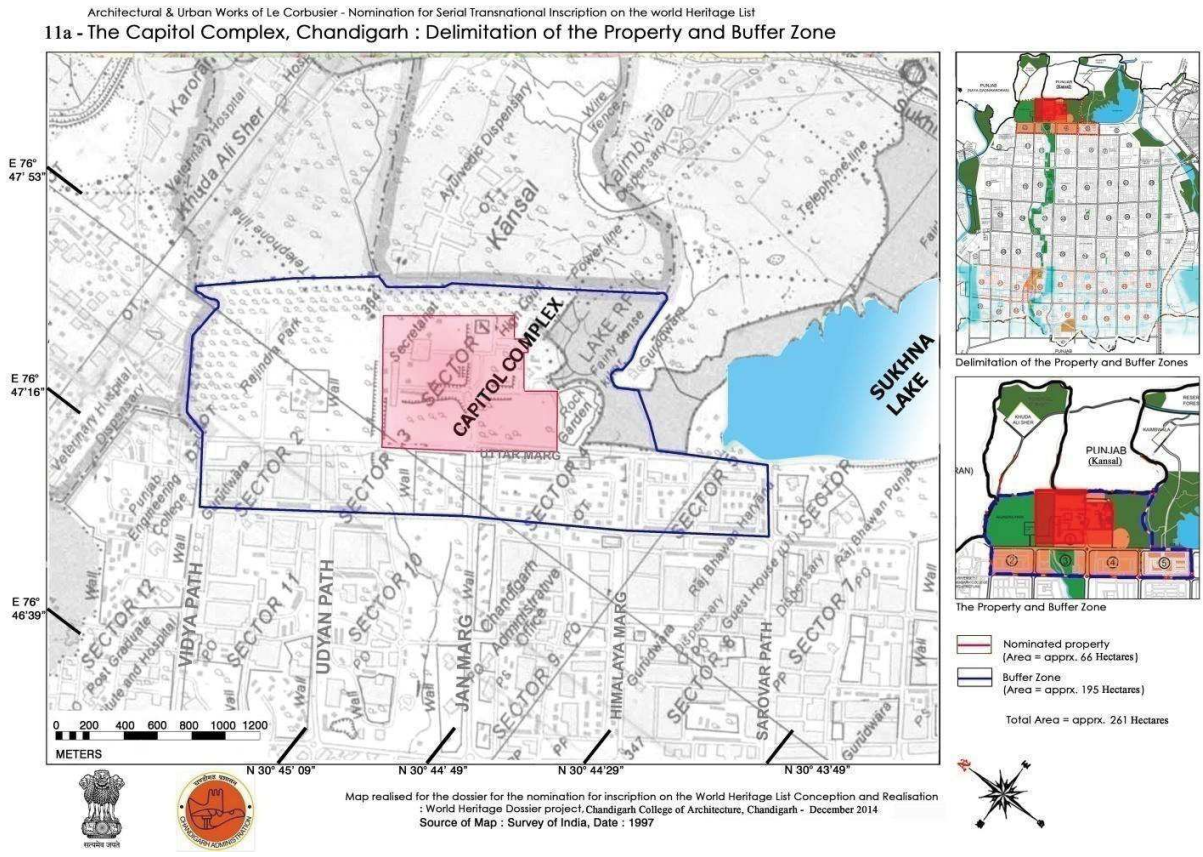


Image 5: Inscribed boundaries of Core zone and buffer zone of WHS Capitol complex, Chandigarh © UNESCO Nomination dossier, 2016

2.1.1 The WH Site

The World Heritage site, Capitol complex is located in Sector 1 at the geographic and topographic head of the city of Chandigarh against the backdrop of the Shivalik Hills towards the north (Image 6). The site is stretched across the width of the city along with Rajendra Park towards the west and Sukhna Lake on its East. The Capitol Complex is connected with the rest of the city through the ceremonial boulevard, Jan Marg (People's Avenue, V2 Capitol).

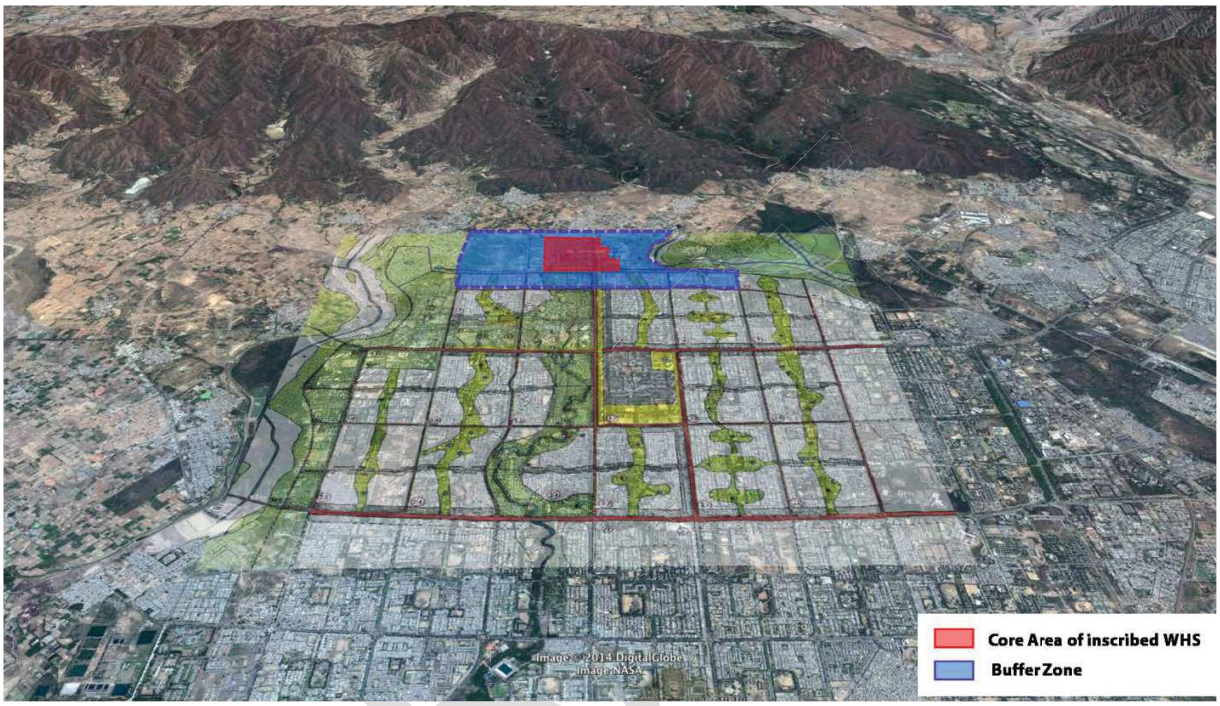


Image 6: Geographic setting of the WH site Capitol complex, Chandigarh ©http://chandigarhurbanlab.org/

2.1.2 The Core Zone of WHS

The Capitol Complex site is designed by the architect Le Corbusier consisting of a group of buildings i.e. Secretariat, High Court, and Legislative Assembly and four monuments: the Tower of Shadows, Open Hand, Martyr's Memorial, and Geometric Hill built on a monumental scale. The site is flanked by Rajendra Park on the northern edge and Sukhna Lake on the eastern. The three heritage buildings and four monuments are part of the core zone of the inscribed WH site (Image 7). The inscribed boundary of the core zone covers an area of 66 hectares (123.55 acres).

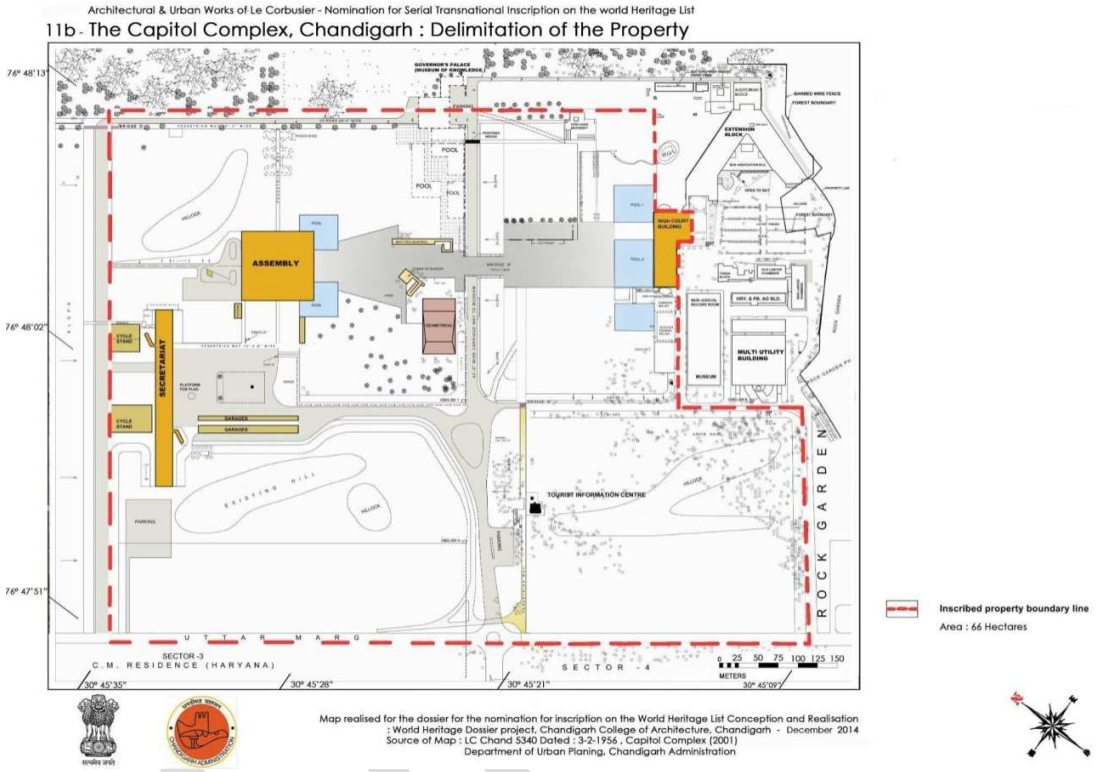


Image 7: Core Zone of the inscribed property, Capitol Complex © UNESCO Nomination Dossier

The site layout is based on an invisible geometry of three interlocking squares, their corners, and intersection points marked by 'Obelisks'. The site is planned on a cross axis wherein rigid symmetry has been avoided in the placement of buildings and monuments to enable a visual thrust towards the hills while providing each building a suitable foreground. While the linear façade of the Secretariat marks the edge of the Complex on the left side, the Assembly and the High Court are placed on the opposite ends of the cross axis, facing each other across a 450-meter Esplanade (open plaza). The placement of the Secretariat and the High Court with the longer facades perpendicular to the hills lend an unobstructed view of the foothills.

The Capitol Complex site was designed as a great pedestrian plaza with motorized traffic confined to sunken trenches. There are artificial hillocks strategically created from the excavated ground around a landscape composition. The core zone of the inscribed property reflects the original planning principles.

Image 8: The building and site views of WHS © HIA Team

2.1.3 The Buffer Zone of WHS

The buffer zone of the Capitol complex constitutes Rajendra park, the rock garden, and adjacent parts of Sectors 2, 3, 4, and 5 (Image 5). The buffer zone covers an area of 195 hectares (481.85 acres) The inscribed boundary of the buffer zone covers all elements that serve to protect the authenticity and integrity of the World Heritage Site.

The northern buffer is defined by the existing mango groves, the southern edge comprises the residential Sectors 2, 3, 4, and 5 which are mostly three storied low-rise developments of government and private properties. This part of the buffer further connects the property to the city along the ceremonial avenue - the V2 Jan Marg. The eastern buffer includes the High Court extension and the Rock Garden while Rajendra Park defines the western buffer. It ensures the protection of the visual connection of the inscribed property with the city. The road along the Rock Garden defines the protected Sukhna Lake Reserve forest area to ensure the environmental protection of the site.

The boundaries of the buffer zone have been established with a view to serve as an additional layer of protection to the inscribed property. The inscribed boundary and buffer zone constitute its OUV and the attributes derived from it. The buffer safeguards the WHS from developments that could adversely affect its attributes.

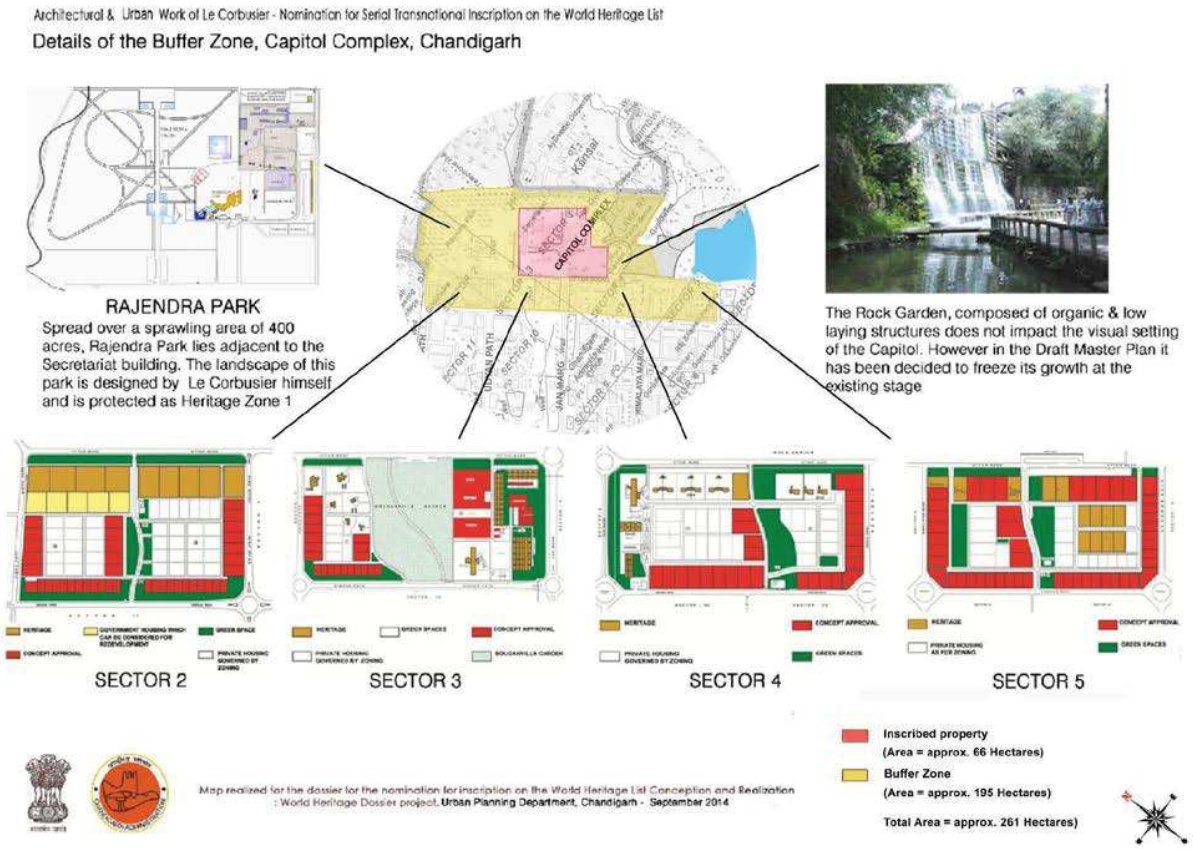


Image 9: Inscribed property and buffer zone © UNESCO Nomination Dossier

2.1.4 Key Inferences

The inscribed boundaries were drafted in 2016 and later revised in 2018. The initial inscribed boundary from 2016 did not incorporate the southern side of the Capitol Complex. This was later revised to include the southern edge of the inscribed property (Image 10).

The revision in the boundary could have been foresight and may have been undertaken to protect the open landscaped area from any future developments.

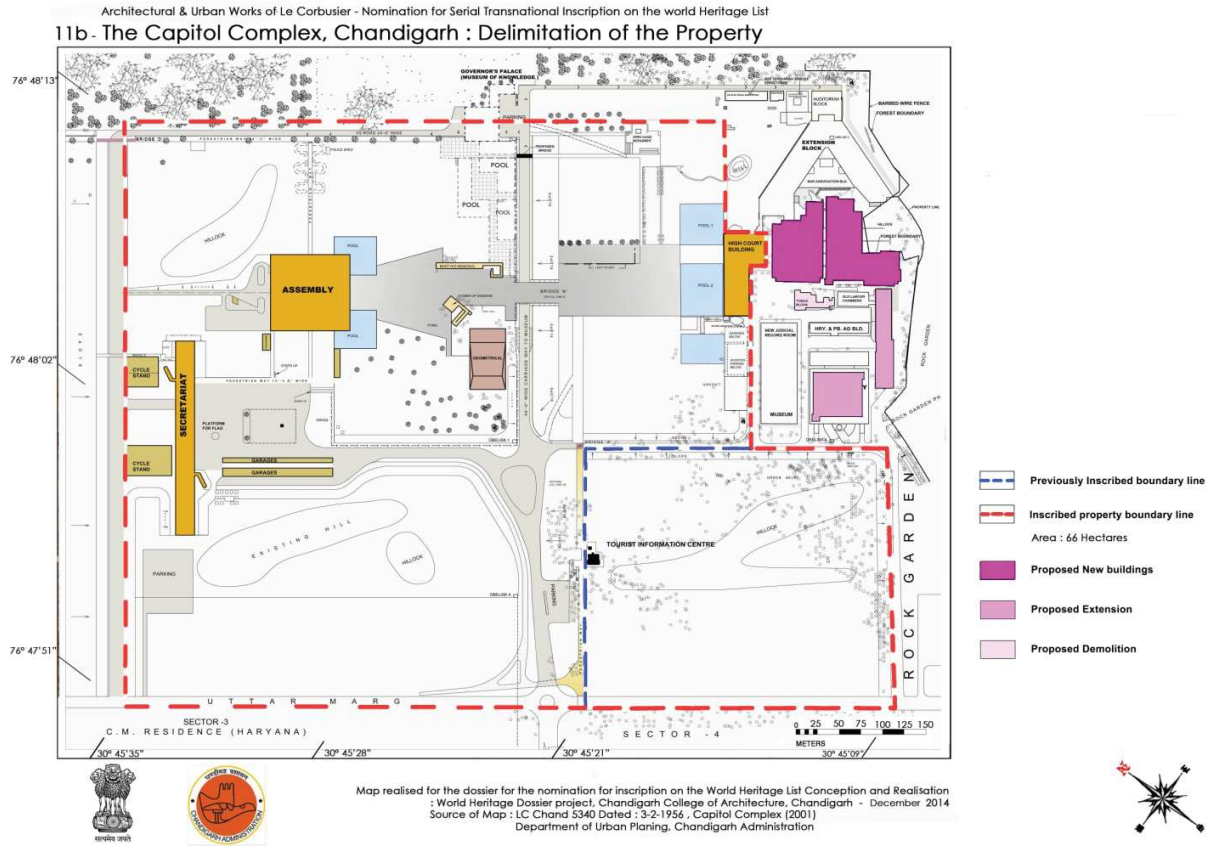


Image 10: Extent of Core zone boundary showing the location of proposed project © UNESCO Nomination Dossier modified by HIA Team

In addition, the core zone of inscribed boundary is considered until the rear façade of the High Court building. The buffer zone toward the eastern side is experiencing the ad-hoc additions which are abutting the façade of the High Court building. The lack of breathable space between the high court and the core zone boundary is causing damage to the inscribed property.

As noted there is an evident need to manage the buffer zone of the WH site. Due to lack of buffer management, the original landscape of the WH site is facing adverse effects from unplanned additions, illegal construction, traffic congestion, unorganized parking, and increasing infrastructural developments in the buffer zone.

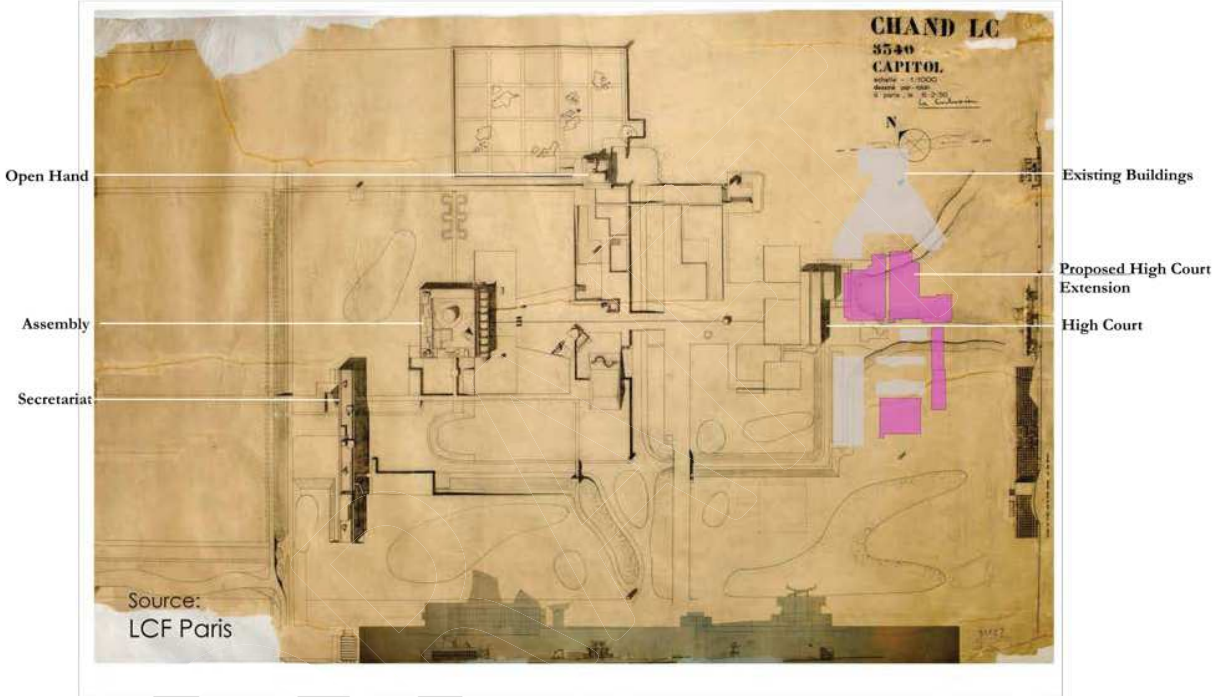


Image 11: Archival image of Capitol Complex, Chandigarh © Foundation Le Corbusier

2.2 Outstanding Universal Value(OUV)

OUV is a central concept of the World Heritage Convention. OUV of the WHS Capitol Complex has such exceptional significance that it is relevant beyond national boundaries and has a universal value for present and future generations.

"The Architectural Work of Le Corbusier" is a **transnational serial property**, consisting of 17 sites spread over 7 countries, chosen together because they represent a unique outstanding universal value**.** The inscription of the Capitol Complex site does not claim to represent alone, the idea of the Modern Movement, but it possesses sufficient integrity to embody an outstanding contribution on a global scale.

The following statement and OUV criteria was approved in 2016. The highlighted text is emphasized in relation to the Capitol Complex since it plays a decisive role in the impact assessment.

"Brief synthesis"

Chosen from the work of architect Le Corbusier that survives in eleven countries on four continents, the sites in seven countries on three continents, implemented over a period of half a century, for the first time in the history of architecture attest to the internationalization of architectural practice across the entire planet.

The seventeen sites together represent an outstanding *response to some of the fundamental issues of architecture and society in the 20th century. All were innovative in the way they reflect new concepts, all had a significant influence over wide geographical areas, and together they disseminated ideas of the Modern Movement throughout the world. Despite its diversity, the Modern Movement was a major and essential socio-cultural and historical entity of the 20th century, which has to a large degree remained the basis of the architectural culture of the 21st century. From the 1910s to the 1960s, the Modern Movement, in meeting the challenges of contemporary society, aimed to instigate a unique forum of ideas at a world level, invent a new architectural language, modernize architectural techniques and meet the social and human needs of modern man. The series provides an outstanding response to all these challenges.*

Some of the component sites immediately assumed an iconic status and had world-wide influence. These include the Villa Savoye, as an icon for the Modern Movement; Unité d'habitation in Marseille as a major prototype of a new housing model based on a balance between the individual and the collective; Chapelle Notre-Dame-du-Haut for its revolutionary approach to religious architecture; the Cabanon de Le Corbusier as an archetypal minimum cell based on ergonomic and functionalist approaches; and the Maisons de la Weissenhof-Siedlung that became known worldwide, as part of the Werkbund exhibition.

Other sites acted as catalysts for spreading ideas around their own regions, such as Maison Guiette, that spurred the development of the Modern Movement in Belgium and the Netherlands; the Maison du Docteur Curutchet that exerted a fundamental influence in South America; the Musée National des Beaux-Arts de l'Occident as the prototype of the globally transposable Museum of Unlimited Growth which cemented ideas of the Modern Movement in Japan; ***and the Capitol Complex that had a considerable influence across the Indian subcontinent, where it symbolized India's accession to modernity.***

Many of the sites reflect new architectural concepts, principles, and technical features. The Petite villa au bord du Léman is an early expression of minimalist needs as is also crystallized in the Cabanon de Le Corbusier. Le Corbusier's Five Points of a New Architecture are transcribed iconically in Villa Savoye. The Immeuble locatif à la Porte Molitor is an example of the application of these points to a residential block, while they were also applied to houses, such as the Cité Frugès, and reinterpreted in the Maison du Docteur Curutchet, in the Couvent Sainte-Marie-de-la-Tourette and in the Musée National des Beaux-Arts de l'Occident. The glass-walled apartment building had its prototype in the Immeuble locatif à la Porte Molitor.

A few sites inspired major trends in the Modern Movement, Purism, Brutalism, and a move towards a sculptural form of architecture. The inaugural use of Purism can be seen in the Maisons La Roche et Jeanneret, Cité Frugès and the Maison Guiette; the Unité d'Habitation played a pioneering role in promoting the trend of Brutalism, while the Chapelle Notre-Dame-du-Haut and ***the Capitol Complex promoted sculptural forms.***

Innovation and experimentation are reflected in the independent structure of concrete beams of the Maisons de la Weissenhof-Siedlung, while pre-stressed reinforced concrete was used in the Couvent de La Tourette. ***In the Capitol Complex, concern for natural air-conditioning and energy saving led to the use of sunscreens, double-skinned roofs, and reflecting pools for the catchment of rainwater and air cooling.***

Standardisation is seen in the Unité d'Habitation de Marseille, a prototype intended for mass production, while the Petite villa au bord du Lac Léman set out the standard for a single span minimal house, and the Cabanon de Le Corbusier presented a standard, minimum unit for living. ***The modulor, a harmonic system based on human scale, was used for the exterior spaces of the Complexe du Capitole, which reflect the silhouette of a man with raised arm.***

The idea of buildings designed around the new needs of 'modern man in the machine age' is exemplified in the light new workspaces of Manufacture à Saint-Dié, while the avant-garde housing at the Cité Frugès, and the low-rent Maisons de la Weissenhof-Siedlung, demonstrate the way new approaches were not intended for a tiny fraction of society but rather for the population as a whole. By contrast, the Immeuble Clarté was intended to revolutionise middle class housing. The Athens Charter, as revised by Le Corbusier, promoted the concept of balance between the collective and the individual, and had its prototype in the Unité d'habitation, while ***the Capitol Complex, the focal point of the plan for the city of Chandigarh, is seen as the most complete contribution to its principles and to the idea of the Radiant City."***

2.2.1 OUV Criteria of the Capitol Complex

The Capitol Complex site as part of "The Architectural work of Le Corbusier" was inscribed based on the OUV Criteria (i), (ii), and (vi). These criteria provide the justification of the property on which the nomination was proposed.

The OUV criteria convey the attributes and values of the WHS. For the impact assessment, the attributes and values have been underlined and highlighted.

Criterion (i): The Architectural Work of Le Corbusier **represents a masterpiece of human creative genius,** providing an outstanding response to certain fundamental architectural and social challenges of the 20th century.

Criterion (ii): The Architectural Work of Le Corbusier exhibits an unprecedented interchange of human values, on a worldwide scale over half a century, in relation to **the birth and development of the Modern Movement**.

The Architectural Work of Le Corbusier revolutionized architecture by demonstrating, in an exceptional and pioneering manner, **the invention of a new architectural language** that made a break with the past.

The Architectural Work of Le Corbusier marks **the birth of three major trends** in modern architecture: **Purism, Brutalism and sculptural architecture**.

The global influence reached by The Architectural Work of Le Corbusier on four continents is a new phenomenon in the history of architecture and demonstrates its unprecedented impact.

Criterion (vi): The Architectural Work of Le Corbusier is directly and **materially associated with ideas of the Modern Movement**, of which the theories and works possessed outstanding universal significance in the twentieth century. The series represents a **"New Spirit" that reflects a synthesis of architecture, painting and sculpture.**

The Architectural Work of Le Corbusier materializes the ideas of Le Corbusier that were powerfully relayed by the International Congress of Modern Architecture (CIAM) from 1928.

The Architectural Work of Le Corbusier is an outstanding reflection of the attempts of the Modern Movement to invent a **new architectural language, to modernize architectural techniques,** and to respond to the social and human needs of modern man.

The contribution made by the Architectural Work of Le Corbusier is not merely the result of an exemplary achievement at a given moment, but the **outstanding sum of built and written proposals** steadfastly disseminated worldwide through half a century.

2.3 Other heritage Values

In addition to the OUV which broadly represents the universal values of the site, the Capitol Complex is of international, national, and local heritage significance.

The heritage and conservation values are identified based on the designation of the site from the international to the local level. These values contribute to the attributes including form and design, materials and substance, use and function, techniques and management systems, location and setting, and other forms of intangible heritage, spirit and feeling.

2.4 Key Attributes of WHS

Based on the OUV narrative, the following chapter summarizes those attributes that contribute to the OUV of the World Heritage property Capitol Complex, Chandigarh.

The attributes identified here are significant features that express the OUV of the World Heritage Site and reinforce its authenticity and integrity. The four levels of recognition such as transnational/global, International, national and local level is analyzed which convey several heritage and conservation values. The OUV criteria and values are unpacked to identify attributes that might get impacted by the proposed action.

Table 1: Heritage Values and Attributes

Level of recognition	Heritage/Conservation values	Sources of information	Attributes
OUV (Transnational and Global)	A unique transnational serial property on a global scale	UNESCO (2016), Nomination file 1321 rev	20th Century architectural (Global influence on architecture and urban planning)
	Represents a masterpiece of human creative genius		Strategic location at Geographic and Topographic "Head" of the city against the back-drop of Shivalik Hills
	Birth and development of the Modern Movement		Urban planning, 20th-century architecture
	The invention of a new architectural language		Concept of Modular scale and the Golden Section applied in the planning
	The birth of three major trends : Purism, Brutalism and sculptural architecture		Plastic creation of building and monuments, Sculptural forms of The geometric Hill, Open Hand, The Tower of Shadows, Martyr's Memorial
	Materially associated		Extensive use of Concrete (High Court, Secretariat, Assembly), Structural innovation
	Represents a "New Spirit" that reflects a synthesis of architecture, painting and sculpture		Landscape composition, the monuments and the plaza, placement of buildings and monuments, artificial mounds with heterogeneous plantation, and meandering roads/pathways

International	A masterpiece of monumental and sculptural architecture celebrating the independence of a nation	UNESCO, Nomination file, 2015	Sculptural form of architecture with more complex shapes (High Court, Secretariat, Assembly)
	Marked the impact of The Architectural Work of Le Corbusier throughout the world		Monumental Scale and empty spaces between buildings (Open spaces and plaza)
	Influence across the Indian subcontinent		Site placed against the foothills of the Himalayas
	The civic centre, derived from the theoretical principles of the Radiant City and the Athens Charter		Exceptional spatial urban design based on modular
National	Heritage Zone		Historic Urban Layout
	Grade-1 Heritage		Masterpiece of sculptural architecture, Spatial Planning and Vistas
Local	Architectural value	UNESCO (2016), Nomination file 1321 rev & SMP, 2012, Capitol Complex	Architectural style, Form, Design, Natural air-conditioning and energy saving, through the use of innovative bio-climate solutions: sunscreens, double-skinned roofs, the orientation and design of openings for transversal ventilation, reflecting pools for the catchment of rainwater and air cooling, terraced gardens
	Scientific value		Technology, Material innovation
	Artistic value		Aesthetic, Sculptural form
	Environmental Value		Gradient of land for natural drainage, Tree plantation, Green open spaces, Sukhna Lake and catchment area

2.5 State of Conservation

The state of conservation of the Capitol complex and its components are evaluated in this chapter. The chronology of buildings is presented since its inception to facilitate the understanding of the site's evolution.

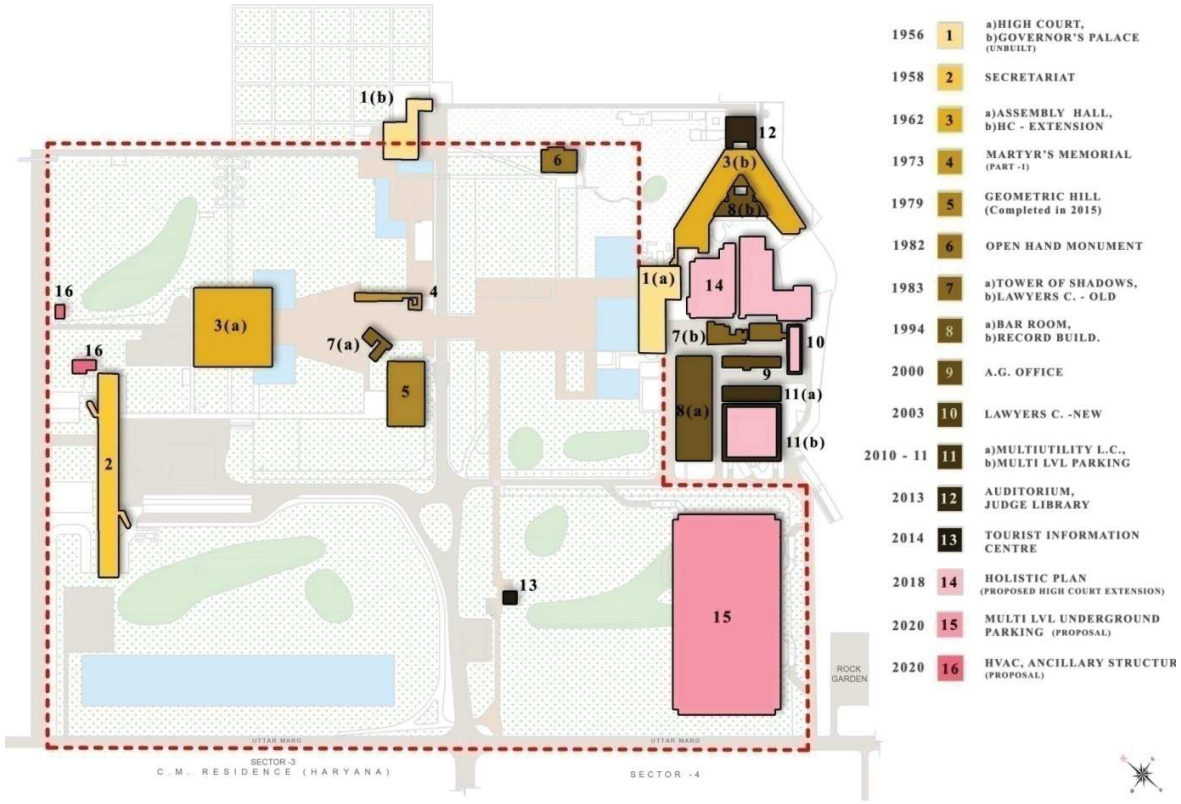


Image 12: Site evolution map of the Capitol Complex

The High Court was the first building to be completed in 1956 followed by the Secretariat in 1958 and the Assembly in 1962. The Open Hand monument is the first and most thoroughly developed monument among the other three monuments of Geometric hill, Martyr's memorial, and tower of shadows. The Open Hand monument was installed in 1982 and is standing tall between the Legislative Assembly and the High Court.

The unique Tower of Shadows was completed in 1983 in its sculptural form which highlights the play of shadow reflecting the architect's studies on the sun paths and ways to control harsh sun through penetration.

The Martyrs memorial and geometric hill were incomplete at the time of the World Heritage nomination process. Originally, the Martyrs memorial took shape in 1973 but it is yet to be fully realized in its entirety. The geometric hill was initiated in 1979 and it was completed in 2015.

The additional buildings such as record room, lawyer's chambers, auditorium, tourist information center, and other utility buildings were added in the 1990s. In addition, the new project proposals are in the line since the WH inscription in 2016.

The Capitol Complex at present reflects the original planning principles. The three heritage buildings and four monuments of the Capitol Complex, in general, are in a fair state of conservation and constant upkeep has resulted in an overall well-preserved condition.

The open spaces within the core zone and buffer zone of inscribed property are facing threats from new infrastructural developments.

The state of conservation of all the components of the Capitol Complex site is presented in the following table:

Table 2: State of Conservation

WH Site Capitol Complex	
Site Components	**State of Conservation**
High Court	**Maintained**
	No permanent changes to original design and layout have been made. On-going restoration work of the concrete and some interior spaces is in progress. Temporary Sheds for spillover from the courts are located on the north facade of the High Court.
Secretariat	**Maintained**
	Additions have been made in the past for security checks, enclosing balconies, the addition of temporary staircases, sheds, barbed wire fencing, etc.
Assembly	**Maintained**
	Ongoing restoration works in the building: exterior and interior.
Open Hand	**Maintained**
	The restoration of the metallic portion of the Open hand monument is planned to be undertaken
Geometric Hill	**Maintained**
Martyr's Memorial	**Maintained**
	Additions of sculptures near Martyr's Memorial are planned to be undertaken.
Tower of Shadows	**Maintained**

Pedestrian Plaza	**Maintained**
	Temporary barricades to address concerns for security.
Buffer Zone	**Not maintained**
	The buffer zone is not maintained facing challenges of Adhoc and unplanned construction of temporary shelters, unorganized parking, rising noise and air pollution
Views of the Shivalik Hills	**Not Maintained**
	The views of the Shivalik hills at various vantage points have been compromised. Real estate development on the north of Capitol Complex has altered the views. The setting of the property and the backdrop of the Shivalik hills is significant to its OUV.
Vehicular and Pedestrian circulation	**Not Maintained**
	Vehicular and Pedestrian circulation system has been altered. The high court road is full of on-road parking and traffic congestion is seen around the high court.

The three heritage buildings and monuments are maintained with some alterations. However, the pedestrian plaza, green open spaces in the core zone, and buffer zone are not maintained as per the original planning concept. The importance of the original planning is very high. The numerous additions, ad-hoc interventions, and extensions may blur the original site layout.

2.5.1 Authenticity and Integrity

The site meets the conditions of authenticity as recognized in the defined OUV criteria and is credibly expressed through a variety of attributes including tangible and intangible (Table 1).

Overall, the authenticity of the Capitol Complex is well maintained in the realized components i.e. the three edifices and the four monuments as well as the general layout of the Core zone of the inscribed property. However, the maintenance of open landscaped areas in the core and buffer zones are being challenged. As a consequence, the project of Holistic development of High Court was planned in the buffer zone of the inscribed property.

The planned projects need careful attention; it may cause a state of despair to the authenticity and integrity of the site.

2.5.2 Factors affecting the WHS

Development pressure - The Capitol Complex being the administrative head of the two states of Haryana and Punjab for the past 60 years, the site has seen enormous pressure on its infrastructure and a manifold increase in the number of users and visitors. The site is facing challenges of Adhoc and unplanned construction, construction of temporary shelters, and escalating need for parking spaces.

Environmental pressure - The inscribed property and buffer zone lies in the water catchment area for Sukhna Lake and the eco-sensitive zone. The potential threat of heavy traffic poses an environmental pressure (air and noise pollution) on the property.

Natural disasters and Risk Preparedness: The inscribed property and its buffer zone lie in the high-risk Seismic Zone 4.

2.6 Protection Instruments

The values and attributes of the World Heritage Site are protected by a system of legal provisions, policies and standards, and a management system of heritage governance. In this chapter, the legal instruments that protect the WHS of the Capitol complex are analyzed.

First of all, the Capitol complex site is protected by the WHS management system of the UNESCO. For the purposes of effective protection of the inscribed property, a buffer zone is demarcated surrounding the core zone of inscribed property that has complementary legal and/or customary restrictions placed on its use and development to give an added layer of protection to the property. Although the buffer zones are not part of the nominated property, any modifications to or creation of buffer zones subsequent to the inscription of a property on the World Heritage List should be approved by the World Heritage Committee using the procedure for a minor boundary modification.[5]

In addition, the inscribed property of the Capitol complex is under the ownership of the Chandigarh Administration hence, protected with a strong regulatory and legal framework. As Chandigarh has the status of a Union Territory, it is under the direct administrative and financial control of the Central Government of India.

Furthermore, the Capitol Complex site has been recognized as a heritage area of Chandigarh's Enlisted Heritage Zone approved by the Government of India and confirmed as such in the Chandigarh Master Plan 2031. In addition, the Government of India's concern to safeguard the city's heritage led to the constitution of the Expert Heritage Committee under the Chandigarh administration. Therefore, no development operation, redevelopment, or engineering, by way of additions, modifications, extensions, or repairs, cannot be carried out on the WHS without the prior written authorization of the Chandigarh Heritage Conservation Committee (CHCC).

[5] UNESCO, "Operational Guidelines for the Implementation of the World Heritage Convention."

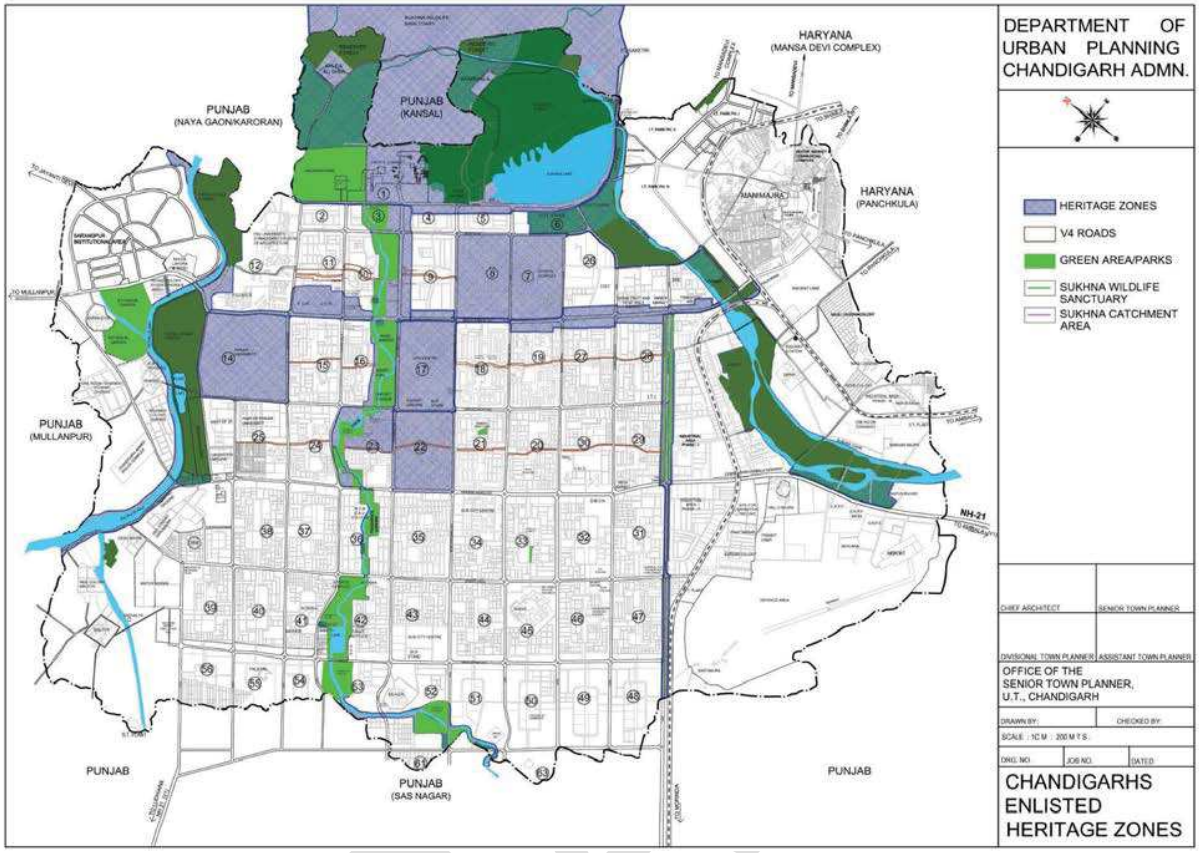


Image 13: Chandigarh Master Plan 2031 © Department of Urban Planning, Chandigarh

2.6.1 Legal Instruments

To control and regulate the development of the Chandigarh city in accordance the following acts are in place which covers the Capitol complex site under the regulations and development controls:

1. The Capital of Punjab (Development & Regulation) Act, 1952

Development within Chandigarh city is being managed through various kinds of development controls. Development controls within the city have its genesis in 'The Capital of Punjab (Development and Regulations) Act, 1952.

For the purpose of proper planning or development of Chandigarh, The Chief Administrator has the power to issue directions in respect of any site or building, either generally for the whole of Chandigarh or for any particular locality. Since the core and buffer zone of the WH site lies within the boundary of the Union Territory of Chandigarh, its management is regulated through the existing legislative framework i.e. The Capital of Punjab (Development &Regulations Act), 1952.

2. **The Chandigarh Tree Preservation Order, 1952.**

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3. **The Chandigarh Tree Preservation Order, 1952.**

   The Chandigarh Tree Preservation Order 1952, was framed to preserve the protected trees, groups of trees, or woodland areas which form the green cover of the City. The rules prohibit the cutting of trees in any part of the woodland area.

4. **The Chandigarh Advertisement Control Order, 1954.**

   Under the Chandigarh Advertisement Control Order, 1954, no person in Chandigarh can install or put up a board or banner without prior permission in writing from the competent authority. Chandigarh does not allow any hoarding or boards or banners or any sort of advertisement at Sukhna lake, all roundabouts, Madhya Marg, Jan Marg, and all other main streets. At places other than these, it is only with the due permission of the civic body commissioner that hoardings can be allowed upon payment of a specific advertisement fee.

5. **Central Air Prevention and Control of Pollution Act, 1988, declaring Chandigarh as an "Air Pollution Control Area"**.

   The entire Union Territory of Chandigarh was declared an 'Air Pollution Control Area' under the Air (Prevention & Control of Pollution) Act, 1981 on 1st February 1988 by the Ministry of Environment & Forests. Earlier, the Central Pollution Control Board was enforcing the Environmental Acts/Rules in Chandigarh. After 1991, the Chandigarh Pollution Control Committee became responsible for performing the functions of the State Pollution Control Board in Chandigarh. The Ministry of Environment & Forests has notified National Ambient Air Quality Standards for various pollutants and the Chandigarh Pollution Control Committee monitors ambient air quality at five different locations and implements various Environmental Acts/Rules in Chandigarh. The ambient air quality of Chandigarh is now under pressure.

6. **Notification declaring the nominated property in the silent zone**

   The Sukhna Lake in Chandigarh comprises an area of 3 sq km is an artificial lake at the foothills of the Himalayas, the Shivalik Hills, and forms part of the Capitol Parc designed by Le Corbusier. This rain-fed lake was created in 1958 by damming the Sukhna Choe, a seasonal stream coming down from the Shivalik Hills, and was a gift to Chandigarh citizens for the enjoyment of peace and tranquility. The area was declared a Silence Zone in 2002.

7. Draft Chandigarh Master Plan 2031

The Chandigarh Administration has finalized the Draft Chandigarh Master Plan 2031 which has given due emphasis to the protection of Chandigarh's enlisted heritage and the recommendations of the Expert Heritage Committee. The Draft Heritage Conservation Regulations are also being prepared. Any further intervention/development within the heritage property and the buffer will be regulated through the overall supervision of the notified Chandigarh Heritage Conservation Committee (CHCC).

8. No Development Zone

The Edict of Chandigarh prohibits any urban development to the north of the Capitol Complex. This was reiterated by the Chandigarh Urban Complex Plan prepared in 1977 by the Coordination Committee. This plan clearly indicates the area of Kansal Village (falling in Punjab) north of the Capitol complex as a "No Development Area'.

9. Notified Eco-sensitive Zone (Securing the Lake's Catchment and Wildlife Sanctuary):

As of 2018, the area comprising Sukhna Lake has been declared an eco-sensitive zone. The entire catchment of Sukhna Lake must be protected from any activities that may threaten the lake's lifespan. No development near the Wildlife Sanctuary should contravene the objectives of Wildlife conservation. The inscribed property of the Capitol complex lies within the Eco-sensitive Zone of Sukhna wildlife sanctuary.

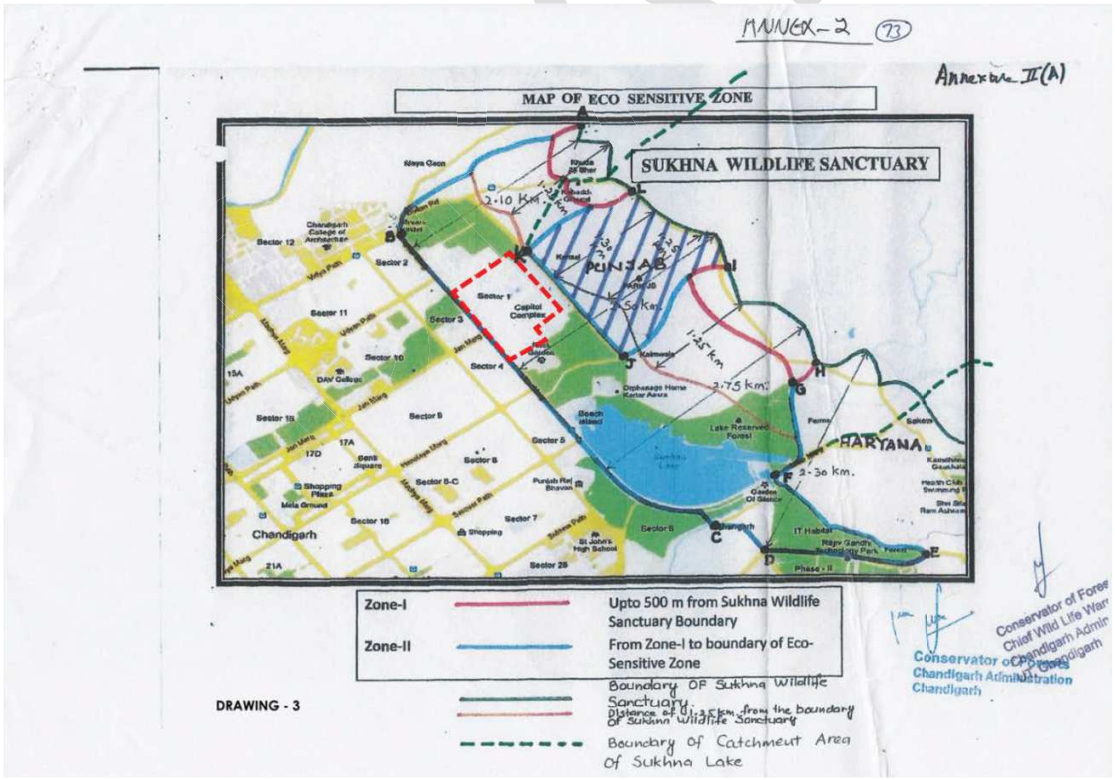

Image 14: Map showing the extent of Eco-sensitive Zone © UNESCO Nomination dossier, 2016

2.6.2 Analysis of the governance and heritage management system

The entire WH site including all its components tangible and intangible is under the jurisdiction of the Chandigarh Administration, Government of India. The buildings are jointly used by the states of Haryana and Punjab under the ownership of the Chandigarh Administration.

Although the property enjoys greater protection both locally and nationally and its preservation has been incorporated within the Chandigarh Master Plan 2031, the city's exponential growth has created a greater need for its physical protection. The WH site of the Capitol Complex is under good governance and due diligence in terms of monitoring and responsibility towards its protection which has resulted in regular maintenance works and initiation of new projects.

The proposed project is planned to solve the issues related to the requirements for additional functions of the High Court. However, the proposed project in the buffer zone automatically triggers the issues of buffer management, operations and maintenance as well as stakeholder's involvement and environmental protection of the WHS that might affect its OUV. The collective impacts of the proposed developments might threaten the authenticity & physical integrity of the WH site.

The existing instruments are in general sufficient to protect the WH site Capitol complex, but the following enforcements are necessary:

- The Capitol Complex should be mentioned as a UNESCO World Heritage site and prioritized as part of the urban developments and planning in the current and future Chandigarh Master Plans. The WH site should be highlighted among the other heritage buildings as part of the historic urban landscape in the City.
- To meet the protection requirements of the UNESCO World Heritage Convention, it would also be essential to encourage and establish regulations on the protection of the buffer zone of inscribed property to protect its imageability and views.
- Planned actions should be taken in consultation with heritage experts for effective management of core and buffer zones.
- The Eco-sensitive zone and water catchment areas should be protected from any environmental degradation activity including cutting of trees, removing top soil, disturbing the natural underground aquifer, pollution, etc.

3. The Holistic Development of the Punjab and Haryana High Court and Alternatives

This chapter gives a description of the proposed project of Holistic Development of the Punjab and Haryana High Court within the close proximity to the inscribed WHS of the Capitol Complex. The Holistic Development of the Punjab and Haryana High Court is planned to be located in the buffer zone of WHS of the Capitol Complex near the Heritage Court building and existing Extension block. The relevant data on the proposal and the current status are used as a basis for analysing the positive and negative effects of the project on the OUV of the Capitol Complex.

Image 15: Satellite view of the proposed project area in the Buffer Zone of the World Heritage site ,Capitol Complex © Google earth, modified by the HIA team

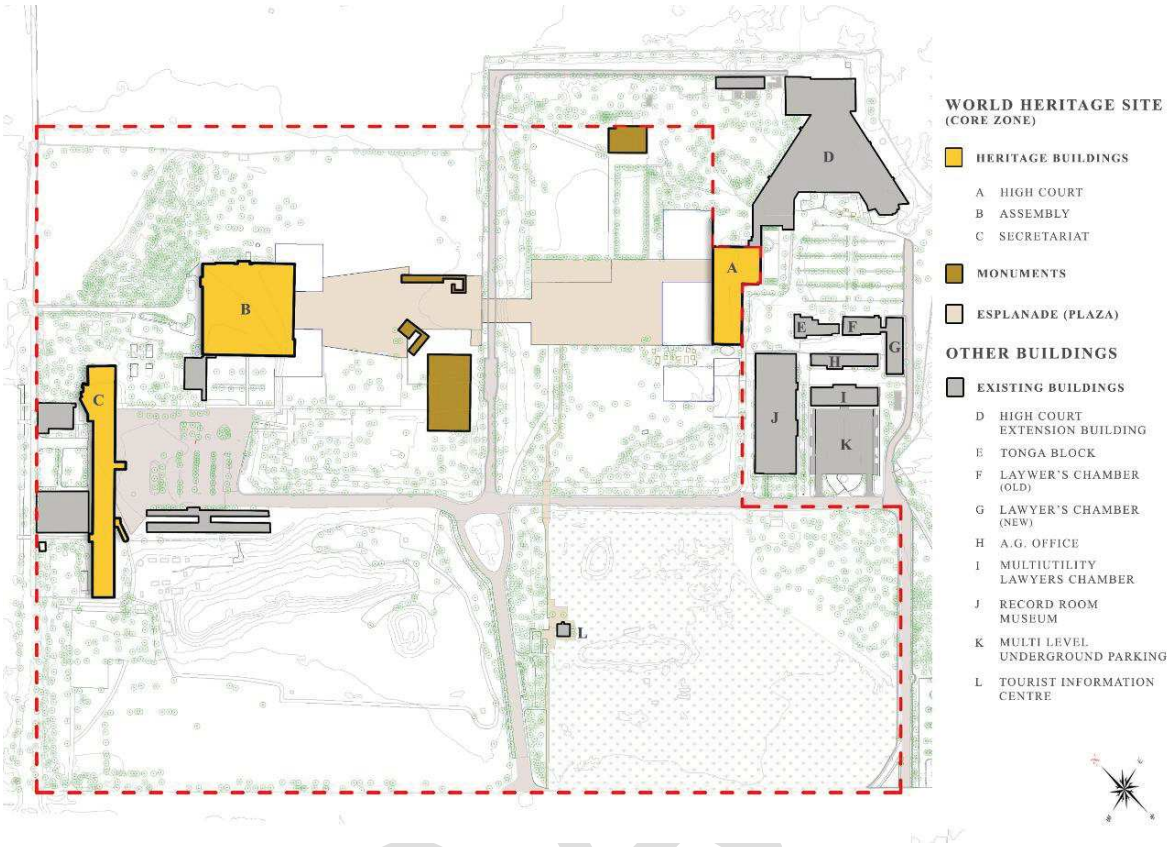

Image 16: Existing site © Base; Lidar Drawing provided by the Engineering Department Union Territory, Chandigarh, modified by the HIA team

3.1 Background Information

The proposal for extension of the High Court has been in discussion since 2014. The Registrar General of Punjab & Haryana High Court invited participation in an Architectural Competition for Holistic development of the High Court, to augment present and future requirements of the Punjab & Haryana High Court for the next twenty years.

Owing to the brief for over 3,00,000 sq.ft of additional floor area as well as additional parking for about 7000 vehicles, Satnam Namita Associates' proposal was approved by the Hon'ble Building Committee of the High Court, and the government.

The proposal was to create a low unobtrusive block of offices and courtrooms behind the High Court building over the existing parking lot. Additional extensions were also proposed to the existing rear lawyer's chambers and the multi-level parking lot. The extension was proposed with terraced landscaping and as a pedestrianised plaza, with three levels of underground parking. Additional parking (if required) was proposed at the area between Uttar Marg and the High Court, which is a part of the Capitol Parc and is presently used as a temporary parking space for visitors.

The winning entry by Satnam Namita associates has undergone considerations from various authorities. In 2018, HIA was prepared for the proposal by ANL Associates according to which certain changes were suggested.

The sub-committee of CHCC reviewed the proposals which were in line with the HIA report submitted by the Consultant Conservation Architect on the same. It was decided by a sub-committee of CHCC that being in the immediate vicinity of the inscribed property, the proposal shall be forwarded to FLC for suggestions.

3.2 Current/existing site in buffer zone

The proposal for holistic development has been proposed in the buffer zone, on the southeast side of the core zone abutting the High court building in the WHS of the Capitol Complex. The existing structures in the vicinity of this proposal are the High court in the core zone, High court extension, Tonga Block, Lawyers chambers -old and new, AG Office, Multi Utility Lawyers Chamber and Multi Level Underground Parking in the buffer zone.

Chronology of the structures in the buffer zone.

Table 3: Additions & extensions adjacent to the High Court Building in the Western Buffer Capital Complex, Sector 1, Chandigarh © Nomination Dossier, UNESCO

Sr. No.	Name of Building /Block	Year of Completion
1.	Main Block C.R No. 1 to CR No. 9 (High Court)	19-03-55
2.	Lawyer Chamber Old block (Four storied).	29-04-83
3.	Extension Block (Phase 2nd) CR No. B-18 to B-21 to FFL	23-09-89
4.	Construction of Bar Room	05-11-94
5.	Record Building Block 2nd	1994
6.	Extension Block (Phase 3rd) CR No. B22 to B29 upto FFL	1999
7.	Advocate General Office Building in the premises of Punjab & Haryana High Court	2000
8.	Consumer Court Sector 19-B, Chandigarh.	13-02-02
9.	Record Building Block Ist Main (A)	31-03-03
10.	Lawyer Chamber New Block (Two Storied)	28-05-03
11.	Record Building Block Ist Main (B)	2009
12.	Multiutility Lawyer Chamber	31-12-10

13.	Multilevel Parking	15-05-11
14.	16 Nos. Court Room at SFL. Above CR 30 to 49	10-03-13
15.	04 Nos. Court Room at S.F.L.	28-02-13
16.	Extension to Bar Room at SFL	30-04-13
17.	Construction of Auditorium and Judges Library.	15-10-13

Image 17: Existing site © Base; Lidar Drawing provided by the Engineering Department Union Territory, Chandigarh, modified by the HIA team

3.1.1 High Court

The first of the buildings to be completed in 1955, high Court, a rectangular structure houses 9 law courts and their attendant spaces. The building is essentially L-shaped in plan and houses eight double-height courtrooms and a triple-height high court on the ground floor with offices above each court. It has X floors and the building height is almost. Three water pools are located on the front (NW side) of the structure that help to mitigate the harshness of the vast plaza and enhance the aesthetics of the building by virtue of reflection in the water.

The back or the south east side has the public entry which is a level lower compared to the front plaza. The back side faces the buffer zone, its structures, open areas and activities.[6]

3.1.2 High Court Extension

The extension was built in C 1962 on the southeast side with more footprint towards the east side. Second only to the Secretariat in terms of the usage, the High Court is privy to 3,920 employees, 68 judges and around 5,000 daily visitors. Preceding the World Heritage Nomination, to cater to demand for space, a low-rise extension block in exposed brickwork had been added to the east, following the initial design by Le Corbusier himself. This has led to issues of additions right from its inception, within the structure and progressively around it. [7]

3.1.3 Tonga Block

The tonga block has been a part of the original layout of the Capitol Complex designed by Le Corbusier. The year of its construction is unknown. It is a single storeyed structure constructed of brick and stone masonry. At present it houses a police post and various offices like Court officer branch, Oath commissioner, High Court employee union office, Typist etc and a canteen.

Tonga block is proposed to be demolished.

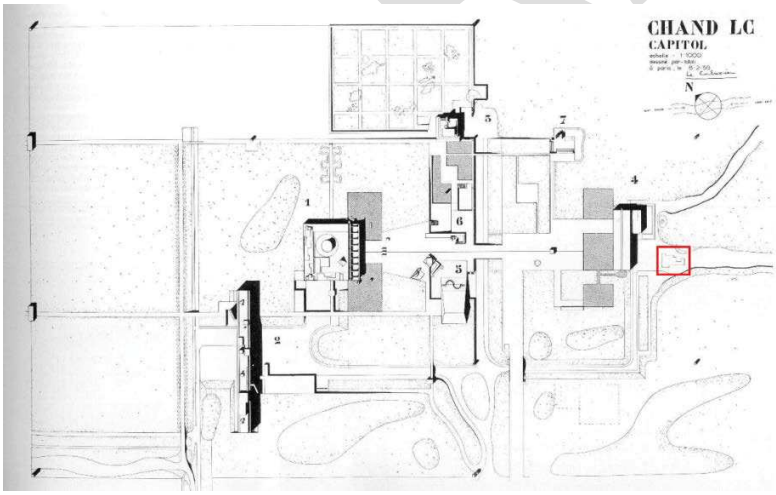

Image 18: Original site layout of Capitol Complex highlighting Tonga Block © Fondation Le Corbusier 3.1.4 Lawyers Chamber (old)

[6] ANL Associates, "Holistic Developement of the High Court, Capitol Complex, Chandigarh."
[7] ANL Associates.

3.3 Need and Objectives of Proposed Holistic Development of the Punjab and Haryana High Court

All the buildings and spaces are under pressure for augmenting work space and service areas as they are serving the growing population of the city and the region with the maximum pressure being felt in the High Court.

As per the SOC, the requirement of additional space to accommodate the functions of the High Court shall be met within the eastern buffer for which holistic planning has been undertaken with the involvement of the Members of the CHCC to ensure harmonious development. To reduce pressure on the nominated property and the immediate buffer some functions of the High Court and Secretariat are also being planned elsewhere in the City.[8]

3.4 Proposed Holistic Development of the Punjab and Haryana High Court

The Holistic Development proposal is prepared for an area of 3.21 lakh sq.ft on eastern side of the High court. The site lies in the buffer zone but abuts the rear elevation of the High Court. The proposal consists of office spaces such as Judicial Branches, General Branches, Court Rooms, Chambers, Lawyers' Chambers/ Bar room and a parking provision for 3500-4000 four wheelers and 2500-3000 two wheelers.[9]

The proposal for the High Court Extension includes the following:

Building Block	Status	No of storeys and Basement	Present Site /Building Use	Proposed Building Use
Block 1	New Construction	G+2, 3 Levels of Basement	Surface Parking	High Court (Extension);Courtrooms, Judges Chamber
Block 2	New Construction	Single Storey, 3 Levels of Basement	Surface Parking	Office Block for staff
Block 3	Existing + modified	G+2, 1 level of Basement	Old Lawyers Chamber	New Lawyers Chamber
Block 4	Existing + modified	G+1, 3 Levels of Basement	Surface parking with 3 Levels of Basement Parking	Office Block for staff

[8] "State of Conservation Report," 2017.
[9] "State of Conservation Report," 2020.

Tonga Block	To be Demolished	Single Storey(existing)	- Police post - Canteen - Court officer branch - Typist - Oath commissioner - High Court employee union office	Demolition

3.3.1 Location

The project site lies in the immediate proximity to the Existing High Court Extension on the eastern buffer zone and at a close proximity from the Heritage High Court Building of the WHS Capitol Complex. The Geometric hill, Tower of Shadows, and Martyrs memorial are not located in the proposed Holistic Development of High Court Extension in the immediate surroundings and are therefore not considered or directly impacted. The map below illustrates the physical distance of two proposed components from the High Court.

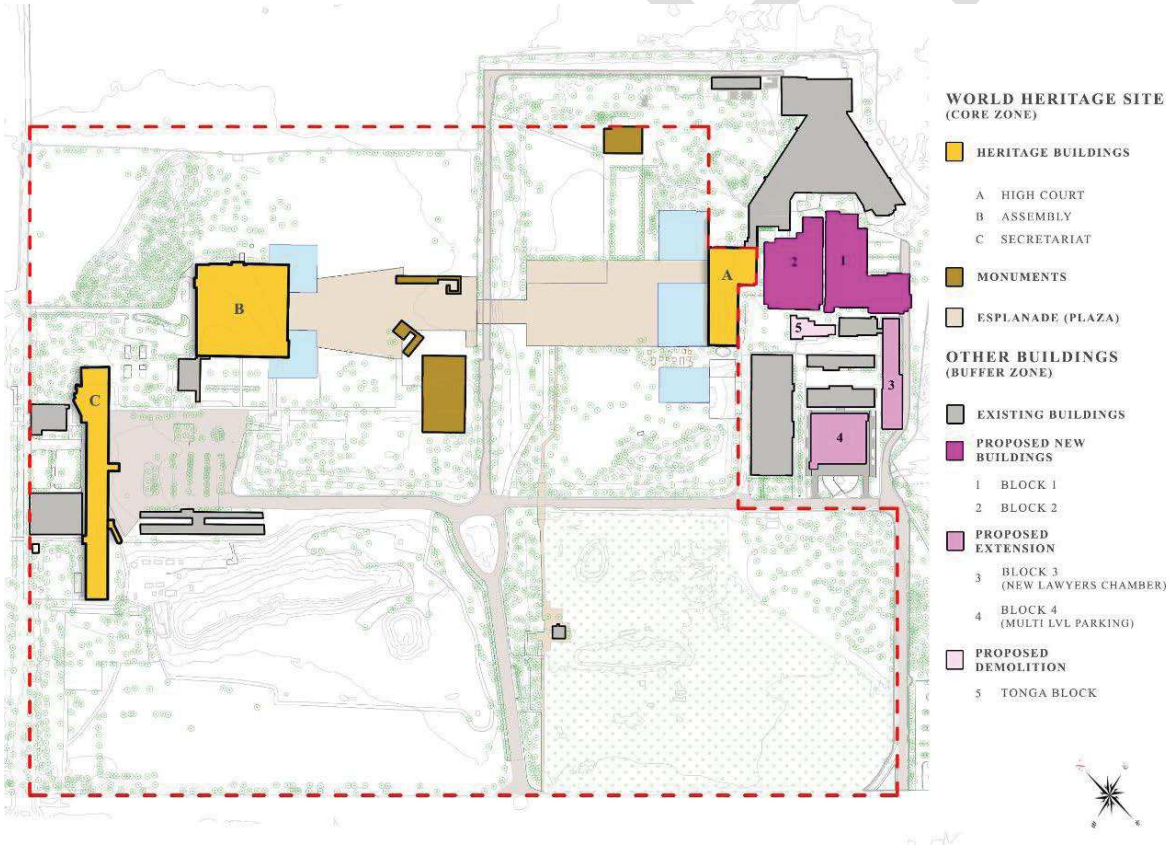

Image 19: Proposed Holistic Development of the Punjab and Haryana High Court © Base; Lidar Drawing provided by the Engineering Department Union Territory, Chandigarh, modified by the HIA team

3.3.2 Site Description

A new Holistic Development plan for extension of the High Court has been proposed near the Heritage Court building and is planned by Satnam Namita and Associates. The site for the proposal has been located near the backside (North-east side) of the High Court building and is surrounded by the existing extension building on the eastern buffer.

Block 1- Judges and Lawyers Chamber with Courtrooms
Block 2- Office Block for Staff
Block 3- New Lawyers Chamber
Block 4- Office Block for Staff
Tonga Block - Demolition

Proposals	**DISTANCE FROM**
NEW Block 1- Judges and Lawyers Chamber with Courtrooms	Distance from **HIGH COURT** 253'-2"(77.17m) 320'-1" (97.5m)
NEW Block 2- Office Block for Staff	Distance from **HIGH COURT** 33'-7"(10.07m) 100'-7" (30.7m)
Extension & New Block 3- New Lawyers Chamber	Distance from **Inscribed boundary** 523'-7" (159.64m)
Extension Block 4- Office Block for Staff	Distance from **Inscribed boundary** 276'-4" (84.26m)
Demolition Tonga Block	Distance from **High Court** 189'-9"(57.87m)

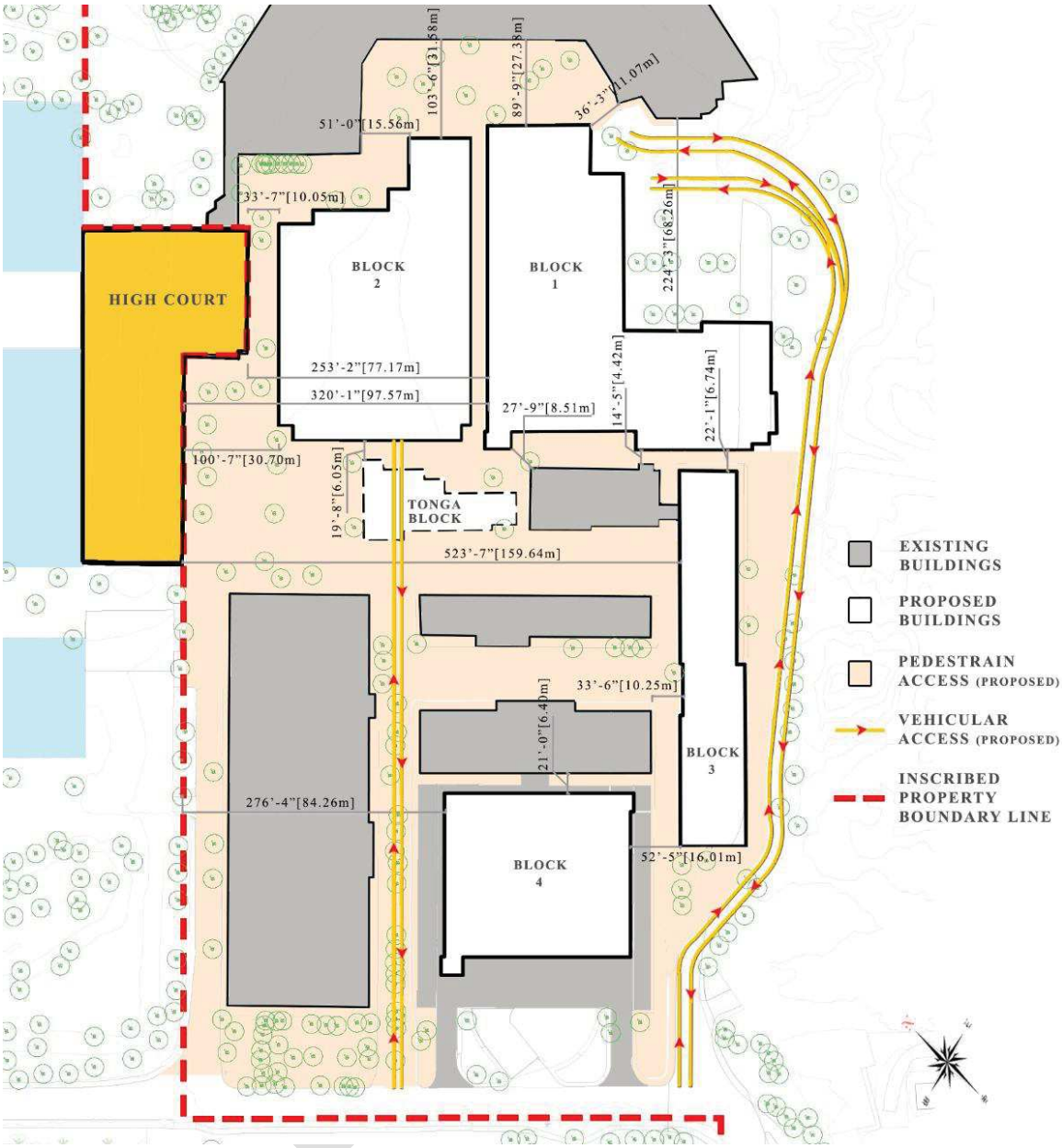

Image 20: Distance map of the proposed HVAC structures from the Secretariat and the Assembly Palace © Base; Lidar Drawing, modified by the HIA team

3.3.3 Architectural Description, Construction Techniques and Materials

The new blocks proposed in the buffer zone have been commissioned by The Registrar General of Punjab & Haryana High Court and designed by Satnam and Namita Associates. Overall, the project aims to meet to accommodate the additional functions of the High Court. The description of architectural space, their heights, circulation patterns and construction techniques are elaborated below for easy reference illustrated with typical plans and sections.

Block 1- Judges and Lawyers Chamber with Courtrooms

The block consists of Lower Ground Floor (68043 Sq.ft), Upper Ground Floor (65065 Sq.ft), First Floor(28866 Sq.ft), Judges Link Level and 3 levels of basements for Parking. The proposed new building is L shaped. There are 2 entrance lobbies for litigants and lawyers from the South West facade of the building, one is in the centre and in front of the existing old lawyers chambers and proposed Block 3, the other one is at the Western edge of the facade. There is a separate entrance lobby for judges at the Eastern facade of the building.The building has 9 skylights for natural lighting and an open office workspace spread throughout the lower ground floor. The upper ground floor has a doubly loaded corridor on the north western side consisting of 20 Anterooms with attached toilets*(Typical anteroom size: 30'-7 ½" x 15'-7 ½")* and 20 Courtrooms *(Typical courtroom size: 40'x26')*. The circulation has been divided into 2 parts, one is for the litigants and lawyers with waiting areas and another one is especially for Judges called the Judges corridor on the Upper ground floor. The first floor has an open workspace with half of the area /space left for the terrace.There are 2 sets of toilets in the building on every floor. One for visitors and the other for staff. The visitors toilet block is adjacent to the central entrance lobby on the right side of the SW facade. The staff toilet is at the rear side of the entrance lobby for the judges on the North eastern facade. For Vertical movement in the building lifts and staircases are provided. Judges corridor has two lifts and a staircase for exclusive access to judges in the north eastern side of the structure. There are 2 staircases for litigants and lawyers, one present between the Staff toilet at the NE side of the building another at the central lobby on the SW facade adjacent to the public toilets block. A central staircase has also been provided for easy movement. There are 5 fire exits present. Upper ground floor is connected to Judges link via a ramp *(from 9'-9" to Judges Link at 18'-6" up to the heritage building and existing extension).*

The total height of the proposed structure is 41'-3". The facade of the structure is made of exposed concrete with brick tile cladding to match the existing lawyers chamber. The fenestration has a screen of glazing with SS fitting running throughout horizontally.

Image 21: Proposed plan of the Block-1 ; Lower Ground Floor © Satnam Namita and Associates

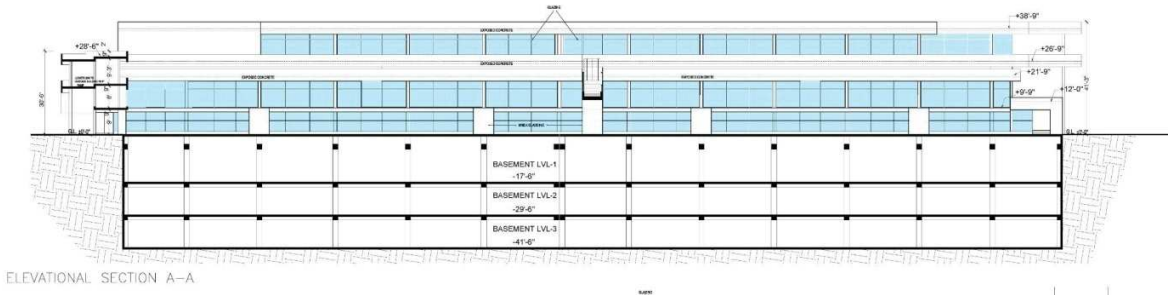

Image 22: Proposed Elevation section AA of the Block-1 © Satnam Namita and Associates

Block 2- Office Block for Staff

The block consists of a Lower Ground Floor (39742 Sq.ft) with a terraced garden and 3 levels of Basements. The form of the building is rectangular in shape with one edge protruding out on the eastern side. The spaces are divided into 4 parts; 2A(Central workspace block; *124'X124'*), 2B (Work space on the south side; *54'3"X128'9"*), 2C(work space on the northern side; *134'6"X22'6"*), 2D (Work space on the east side; *61"X44'3"*). The central block 2A is connected to other spaces via a 8' wide corridor on all three sides. The building has 9 open to sky courtyards and 19 skylights for natural lighting. All the blocks have separate entry/exits points with ramps for universal access. The entry to the proposed structure is from the western side of the building and a ramp connecting the basement to the lower ground floor on the southern edge of the building. There are two sets of toilets, each located on either side of the entrance lobby; the staff toilet is on the left side and the other for visitors is on the right side of the western edge of the structure. Since the structure has 3 levels of basement for parking, lifts and staircases have been provided for vertical movement. There are 3 staircases with 2 sets of lifts respectively; the first one is adjacent to 2D, the other is adjacent to 2B and the last one is adjacent to the visitors toilet near the entrance lobby. Keeping in mind the corbusier's legacy of a roof garden, various plantations have been proposed on the terrace.

The total height of the proposed structure is 10'-6". The facade of the structure is made of exposed concrete with certain parts made of stone masonry. The fenestration has a screen of glazing with SS fitting running throughout horizontally.

Basements for Block-1 and Block-2 are connected. The total no. of cars that can be parked in the basements are 804 and 615 two wheelers. Level-1, 2, and 3; No. of cars- 268, No. of 2 wheelers- 205, a separate parking for judges is also provided which is 20 in no. on each level. There are 2 ramps in the assessment, one can be accessed through Block-1, the other from Block-2.

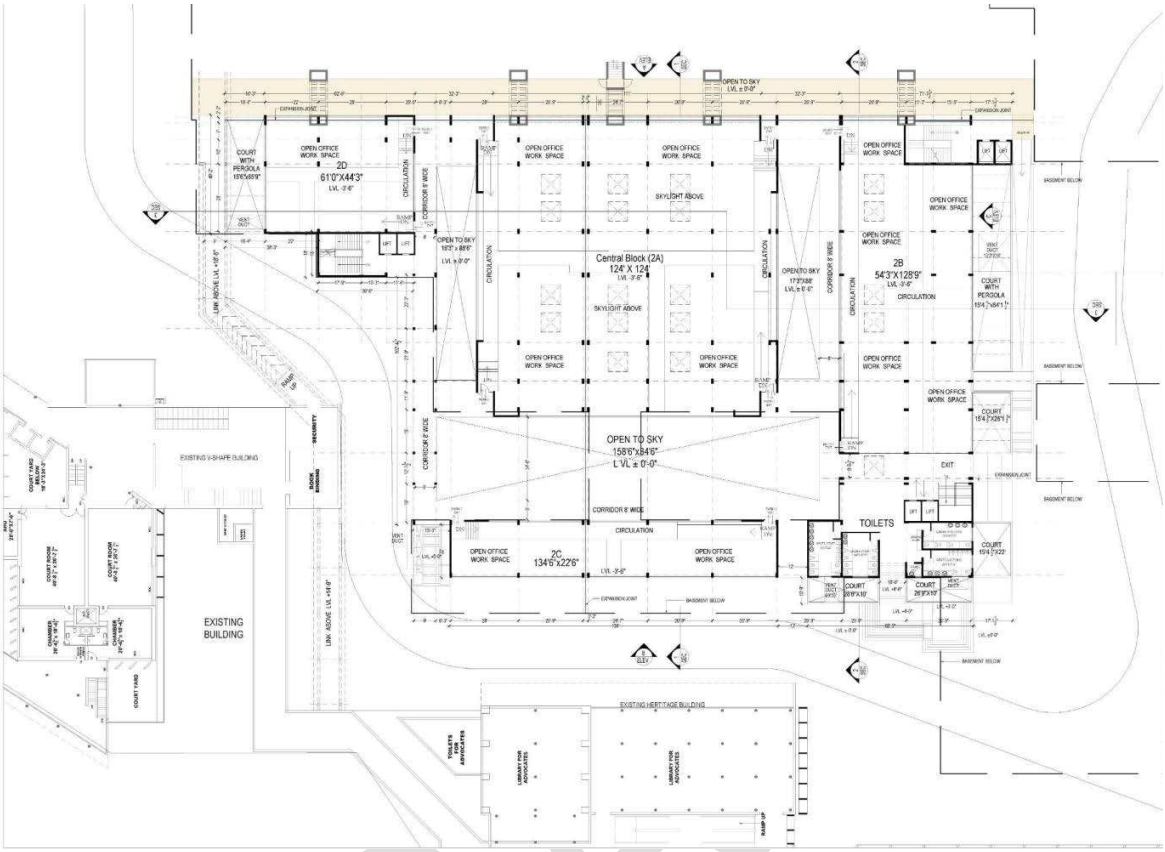

Image 23: Proposed Plan of Block-2; Lower Ground Floor © Satnam Namita and Associates

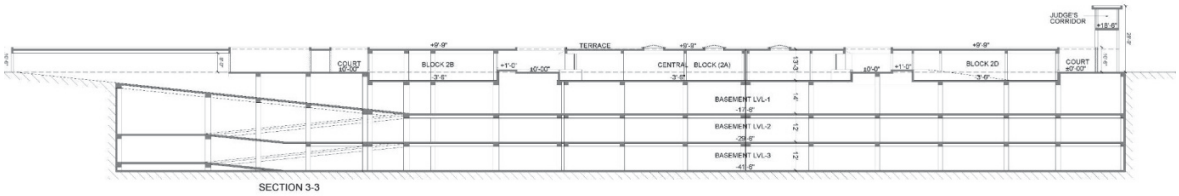

Image 24: Proposed Section 3-3 of Block- 2 © Satnam Namita and Associates

Block 3- New Lawyers Chamber

Block 3 is a combination of an existing building (name) and a new one interlinked together to create one block. The proposed structure is linked with the existing chambers via a passage which connects them on the first floor.

The new block consists of a Ground Floor (9315 Sq.ft) , First Floor (10660 Sq.ft) and Second Floor (28975 Sq.ft) with a terraced garden and 1 level of Basement. (10866 Sq.ft). The form of the proposed structure is rectilinear. There are two entry points to the proposed extension, one is from the south eastern side, the other from the North western facade. A ramp for Universal access has been provided on the SE facade of the building. The existing lawyers chamber has a doubly loaded corridor whereas in the new building each floor has an open office work space with 2 staircases; one(Fire exit) at the SE side, the other at the entrance of SE side. For vertical movement a lift (6'-0 X 7'3") is provided near male toilet. There are 2 toilets (Male and Female) adjacent to either side of the entrance staircase on the NW facade. A separate washroom adjoining the female toilets has been provided for differently abled. A ramp for basement parking is present at the right side of the NW facade. An additional floor (second floor) is also added to the existing chambers which is again connected to the proposed extension via a passage. The total height of the proposed structure is 39'6". The facade of the structure is made of exposed concrete with brick tile cladding to match the existing lawyers chamber. The second floor has a screen of glazing with SS fitting running throughout horizontally.

Image 25: Proposed Plan of Block-3 with red indicating the modification/extension to the existing building; Green indicates the new block Ground Floor © Satnam Namita and Associates

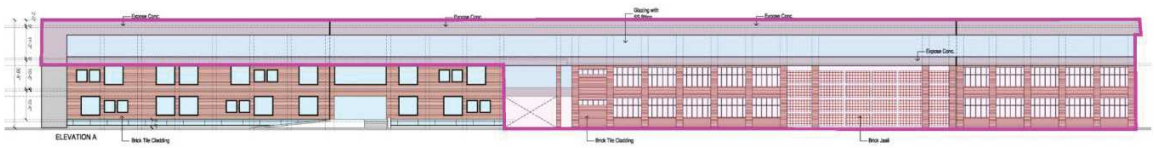

Image 26: Proposed Elevation of Block-3 © Satnam Namita and Associates

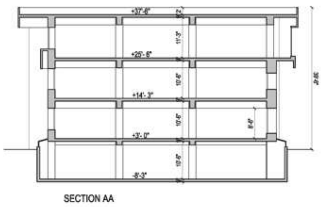

Image 27: Proposed section AA of Block-3 © Satnam Namita and Associates

Block 4- Office Block for Staff

Block 4 proposal is to add floors for an already existing multilevel underground parking block. The proposal consists of a Ground Floor (35600 Sq.ft) with a Mezzanine floor (10400 Sq.ft). The proposed structure is rectangular in form and it consists of 2 entrance lobbies, one is on the SE facade and the other on the NW facade. On the western edge of the structure there is a ramp for differently abled and they have a separate entry point on the SW facade. Since there is no lift present in the structure, for universal access a ramp connecting the ground floor and mezzanine floor has been provided on the NW Facade adjacent to the toilets. There are 3 staircases; two at each entry and one coming up from the basement on the SE facade. The entire ground floor has designated work rooms and ample space for circulation.There are 2 toilets, one on the extreme right of the NW facade and the other one on the extreme left of SE facade. There are 2 double height skylights present on NW & SE facade respectively. The mezzanine floor is at +16" from ground level. It has an open corridor at the centre of the floor. The total height of the proposed addition is *19'-1 ½"*. The facade of the structure is made of exposed concrete with elements like brick jaali and concrete jaali. The plinth level of the building will be concealed with an element of brick jaali on the NW & SE facade. The entire building will have a screen of glazing with SS fitting running throughout horizontally and vertically.

Image 28: Proposed pan, Block-4 showing extensions © Satnam Namita and Associates

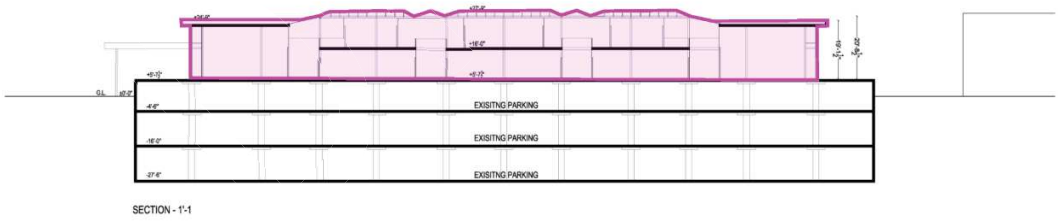

Image 29: Proposed section 1-1 of Block-4 © Satnam Namita and Associates

3.4 Key Inferences

The holistic development has been planned and proposed to accommodate the growing needs of the WH site of the Capitol Complex. The proposed project site (in buffer zone) was originally conceptualised and was envisioned to have 'green belts' only in the direction of the slope of the plans with green valleys and water channels. . But due to developmental pressures and increasing needs of the complex this area was utilised to house new functions. The Extension building was planned immediately after the complex was ready. Other structures were built in the 80's, 90's, 2000 up to 2013. No development has been built since the inscription as a world heritage site. These existing buildings have already created spaces with chaotic user experience with little sensitivity to the values of the WH site.

The holistic plan proposes several blocks amongst which the Block one has the maximum height amongst all the proposed buildings. Block two is primarily an underground structure. Block 3 & 4 are two storeys above the ground. Block 4 is proposed to have a floor with mezzanine above ground. Overall the skyline will be altered completely. The sight lines and vistas to and from the buildings in the Capitol Complex will be obliterated. This site is not an ideal location for proposing so many structures that will cause a hindrance to the views. The buildings are located in extremely close proximity to the High Court building and are punctured with new roads for circulation to be visited by a large number of users and visitors every day will cause further nuisance and pressure on the core as well as the buffer zone.

Any further construction on the already saturated buffer zone on the south east side would completely damage the existing/remaining vistas and sightlines with a diminished user experience.

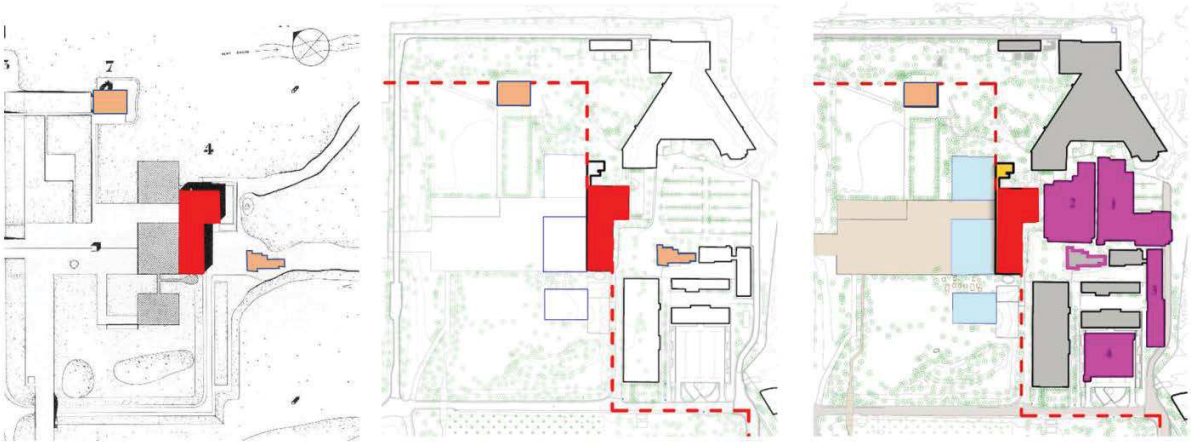

Image 30: Comparison between Original Site layout, Existing and proposed

Image 31: Proposed View of High Court Extension © Holistic Development of High Court– HIA Report, by ANL associates, September 2018 modified by HIA team

Image 32: View from plaza showing proposed intervernin, © Holistic Development of High Court– HIA Report, ANL associates, September 2018 modified by HIA team

3.5 Alternatives of the proposed Holistic Development of the Punjab and Haryana High Court

In this section, the three alternatives of the proposed project are assessed including the 'no project' alternative. The scenarios with or without the HVAC (Ancillary Structure) project are evaluated in order to establish the most sustainable option that both protects World Heritage and achieves the objectives of the proposed action.

3.5.1 Scenario 1: "No Project"

In the case of "No project"

- Currently, the buffer zone of the WH site is experiencing adverse impacts from the unplanned development of new constructions.
- At the moment there is a lack of management & monitoring systems of the buffer zone of WHS. Additionally, the management plan does not address or provide any guidelines and regulations for future development in the buffer Zone. This has created an imbalance between the demand and needs to accommodate the additional functions. The current situation needs long-term sustainable actions to protect the OUV of the WHS.

3.5.2 Scenario 2: "An Alternative Project"

The broad alternatives are explored to cater to the need of the purpose project.

As per the baseline assessment, the following alternatives are explored:

- Due to the increasing inflow of users, the site is facing several challenges such as unorganised parking, and additional space requirements to accommodate large no. of staff. A pragmatic approach needs to be considered to decongest the High Court to find a long-term solution. This could be carried out in several ways such as decentralising the High Court activities and moving a few activities to the other courts to one or more appropriate locations which will reduce the burden on the WHS.

3.5.3 Scenarios 3: "Proceeding with the proposed project"

The scenario of proceeding with the proposed project is assessed to determine its potential impacts on the WHS.

In the case of "Proceeding with the project"

- The proposed project would cause expansion of the incoming population and an increase in footfall to the WH site may be a huge potential threat.
- It would require an additional burden for the management and monitoring of the WH site for maintenance and security reasons.

4. Identification and Predicting Impacts

In this chapter the potential impacts of the proposed project "**The Holistic Development of the Punjab and Haryana High Court" project** are identified. A summary of the project's components and their interaction with the attributes are presented in table 4.

In addition, the direct, indirect, and cumulative impacts of the proposed **project** on the attributes of the WHS are assessed considering that impacts may occur at any stage of the proposed action.

4.1 Components of the proposed project and types of impacts

Based on the proposed project's characteristics the five components of the project are categorised that have the potential to cause impacts (direct, indirect, and cumulative) on the attributes.

The components of the proposed project are the following:

1. Construction of new buildings
   Block 1
   Block 2
2. Construction of extension/ addition to the existing buildings
   Block 3
   Block 4
3. Demolition of existing building
   Tonga Block
4. Construction of new access road
5. New operation of existing roads and pathways

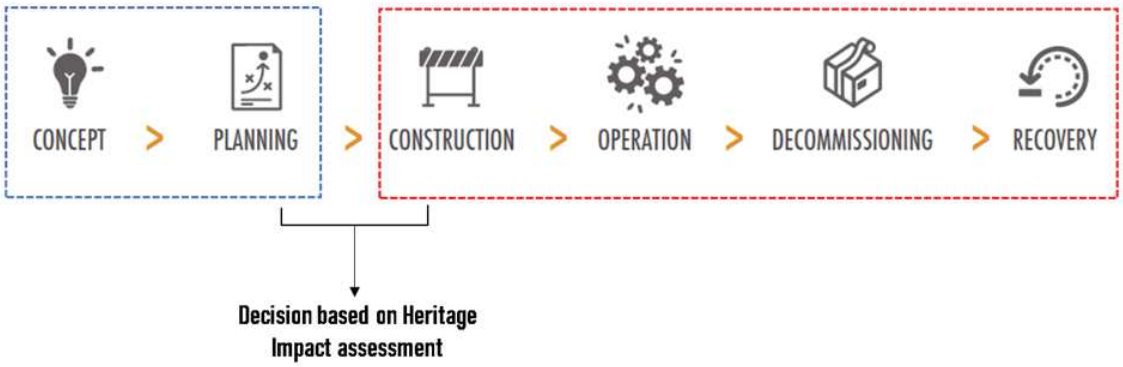

Image 33: Life cycle Stages of the Proposed project

There are different stages in the development and implementation of the proposed project (Image 31). The two stages of concept and planning of the proposed project have taken place and the construction, operation, decommissioning and recovery phases will take place in the future. The impact assessment is carried out before construction or any other preparatory actions that would take place on the ground if approved.

Three types of impacts are identified as per the **Guidance and toolkit for impact assessment** following:

Direct Impacts

Direct impact is the result of a cause-and-effect relationship between a project and a specific attribute of World Heritage or other environmental components.

Indirect Impacts

Indirect impacts are impacts on the environment that are not a direct result of the project, often produced away from or as a result of a complex pathway. Sometimes referred to as 'second' or 'third-level' impacts, or 'secondary' impacts.

Cumulative impacts

A cumulative impact results from the environmental impacts of a project combined with the same environmental impacts of other past, existing, or reasonably foreseeable future projects or activities, including those that may be enabled by the project. New proposals may have less impact because the heritage has already been severely compromised by previous agents of change, or they may add to the existing impacts in a cumulative manner making existing situations much worse.

Legend for types of Impacts

	Direct Impact		**Indirect Impact**		**Cumulative Impact**

4.2 Identifying potential Impacts

In this chapter, the impacts of the **"Holistic Development of the Punjab and Haryana High Court**" project, on the OUV of the Capitol Complex are evaluated. The heritage building High Court is facing increasing pressure and threat from the development and alterations in the surrounding. Each instance of new construction or demolition next to the heritage buildings will involve varying risks and could cause significant damage to the historic fabric and its associated values.

A brief summary of the identified potential impacts that may come from the proposed project is provided. Further by using the matrices for systematic cross-tabulation of the proposed project with identified and existing heritage resources and their significance-bearing attributes are assessed.

Summary of potential Impacts of the proposed project

4.2.1 Propose New Buildings (Block 1 & Block 2)

The proposed new construction of Block 1 & Block 2 buildings will be located behind the High court building (Image) in the buffer zone of the inscribed property. It is in close proximity to the rear façade of the High court which will alter the visual and spatial relationship between the heritage building and its setting. The foreground of the rear façade will be covered with built spaces that would increase no. of people and traffic movement in the site.

The construction activities have the potential to produce vibrations that may cause damage to the heritage building. The use of heavy machinery for excavation, drilling, trenches, and other construction works will produce ground-borne vibration and soil settlement. The anticipated air & noise pollution caused by the earthworks, construction, and vehicular movement will pose health risks and nuisance in and around the WH site.

In addition, the proposed new blocks are in the notified eco-sensitive zone and water catchment area of the adjoining Sukhna Lake. The potential impacts on the soil from the underground construction will cause environmental degradation and damage to the ecosystem.

4.2.2 Proposed Extension (Block 3 & 4)

The proposed extension and addition of Block 3 & Block 4 to the existing buildings are located in the buffer zone of the inscribed Site. The proposed extension of the lawyer's chamber (Block 3) and multi-level basement parking (Block 4) will alter the existing buildings, circulation, uses, etc. The visual integrity is a vital part of the WHS of the Capitol Complex whereas it would be compromised due to the extension and addition of new construction.

In addition, the impacts associated with the proposed extension are an increase in built areas, operation and maintenance, and management.

4.2.3 Proposed Demolition

The proposed demolition of tonga block (Tanga Block)is to provide vehicular access to the proposed new construction of blocks 1 & 2. The tonga block is part of the original site planning that was conceived by the master architect Le Corbusier. It carries the historic and architectural values that will be diminished in case of demolition. The impact of the proposed demolition would cause damage to the authenticity and physical integrity of the WHS.

4.2.4 Proposed New roads and pathways

To serve the proposed new buildings and extension, a new road and pathway for vehicular and pedestrian access are planned. The development of new facilities is proposed such as vehicular movement, pedestrian access, fire tender path, and linkages between the existing & proposed buildings. It would change the surroundings, ground cover, existing trees will be cut down and create nuisances around the heritage site.

4.2.5 New Operation of existing roads and pathways

The alteration in the operation of existing roads and pathways would lead to changes in the original access. It would increase traffic movement in the buffer zone of the WHS. The new operations may increase people entering the site and cause disturbance in the protected area. The change in vehicular access to the site would increase the challenges of providing security in the protected areas.

The following table is prepared to identify and ascertain the impacts (environmental and social) of the proposed "Holistic Development of the Punjab and Haryana High Court" project. The table also helps in determining the type of the characteristics of these potential impacts, including disclosure of any uncertainty. It highlights what changes to OUV and other heritage/conservation values would occur as a result of the proposed action which is both positive and negative.

Attributes	Components of Proposed Project (Holistic Development of the Punjab and Haryana High Court) that has the Potential to Cause an Impact				
	New Construction	Extension and Addition	Demolition	New Construction	New operation
	Block 1 & Block 2	Block 3 & Block 4	Tonga block	Roads and pathways for vehicular & pedestrian access	Existing Roads and pathways
Historic Urban Layout	**Cumulative impacts** from the existing buildings and new construction will alter the intended original urban layout				
Site Planning	**During construction** the alteration the geometric layout planning	Extension and Addition of new buildings will change the original site aesthetics	Demolition will hamper the original & existing site planning and would lead to loss of historic material	**During construction** alteration in site levels and ground cover	
Original Landscape composition	Direct impacts from the **construction, operation and decommissioning** would cause damage to the existing landscape elements	**During & Post construction** the extension of buildings will increase the footprint of the built spaces causing damage to the open spaces	**During & post Demolition** the original landscape composition will be altered	During **construction and operation** of new roads and pathways will alter the original landscape	
Heritage Building (High Court)	Direct impacts from **construction phase** would cause immediate harm to the heritage building from the excavation and foundation works	Direct impacts from the **post construction** disturb the views from the High Court		Indirect impacts during **construction, operation & decommissioning** phase, the new roads and pathways would increase movement of heavy construction traffic, traffic congestion that can create nuisance including noise, vibration, dust and	During **operation pha**se the new access route may bring large numbers of vehicles & pedestrians causing disturbance in the WHS

				loss of amenity	
Heritage Building (Secretariat and Assembly)	Indirect impacts are expected from the new **construction** that would cause damage to the site environment from the use of heavy machinery, large vehicular movement , increase in traffic, causing air and noise pollution	Cumulative impacts from **Construction & operation phases** would cause damage to the visual & spatial relationship of the site		same as above	same as above
Monuments (The Geometric Hill, Open Hand, Tower of Shadows, Martyrs Monument)	same as above	same as above		same as above	same as above
Esplanade (Plaza)	same as above	same as above		same as above	same as above
Original roads and pathways				**During and post construction** alteration & disturbance in the site circulation	**During operation** the alteration in the original site access and site circulation
Imageability & Views	**Post construction** drastic alteration in the visual integrity of the site	**Post construction** the additional floors in the existing buildings would change the skyline of the site and alter the original & existing views	**Post Demolition** will lead to loss of original site views	**During operation** phase the increase in traffic flow and crowding around the site would cause damage to the site views to the High Court	**During operation** phase the alteration in original site circulation, vehicular and pedestrian access would disturb the serenity of the site on daily basis and long-term
Artificial mounds	Direct impact **during construction** would alter the site mounds to create flat surface				

Green Open Spaces & Heterogeneous plantation	**During construction** the existing trees will be cut down and **post construction** the ground surface will be covered with hard surface	**Post construction** Increase in built areas would reduce the green open space and therefore alter the micro climate of the site		**Post Construction** the increase in hard surfaces for vehicular and pedestrian access would destroy existing plantation and alter the micro climate	
Adjoining Sukhna Lake & catchment area	Environmental threats are expected during the **construction phase**. The underground construction would disturb the eco-sensitive zone and water catchment area of Sukhna lake	**During construction** the removal of existing vegetation, flora and fauna may lead to natural disasters in the future			

4.3 Results

For the proposed **"Holistic Development of the Punjab and Haryana High Court"**, it is determined that the proposal will have potentially negative impacts including direct, indirect, and cumulative impacts on the attributes of the Capitol Complex.

Considering the identified impacts on each attribute following are the findings

- The impacts during the construction stage of the project are direct and cumulative impacts. The direct impacts will cause alteration and disturbance to the original site planning, landscape composition, site orientation, and its components.
- The cumulative impacts are amplified by the proposed project and existing building around the High court within the buffer zone of the inscribed property. In the future, these may lead to the alteration in the urban layout, environment, authenticity and integrity of the site.
- The direct impacts from the demolition of Tonga Block will cause damage to the historic integrity of the site.
- The impacts from the new access road and new operation of the existing access road and pathway are indirect. It may cause damage to the authenticity of the WH site.
- Overall, the significant direct, indirect and cumulative impacts will be produced during the life cycle of the project that could be detrimental to the WH status of the Capitol Complex Site.

Further, based on the identified potential impacts, in the next section, an informed prediction is made about the likely scale and nature of these impacts (Table 5). The predictions of the impacts include a range of characteristics such as magnitude, type, extent, duration, frequency, reversibility, and likelihood.

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"UNESCO World Heritage Centre - Decision - 44 COM 7B.152." Accessed September 24, 2022. https://whc.unesco.org/en/decisions/7867.

"Urban Planning." Accessed October 2, 2022. https://urbanplanning.chd.gov.in/index.php/home/page/20.

List of Images

Allemagne, Argentine, Belgique, France, Inde, Japon, Suisse

Argentina, Germany, Belgium, France, India, Japan, Switzerland

L'Œuvre architecturale de Le Corbusier, une contribution exceptionnelle au Mouvement Moderne

The architectural work of Le Corbusier, an outstanding contribution to the Modern Movement

Rapport sur l'état de conservation des 17 composantes du bien en 2022

Report on the state of conservation of the 17 components of the property in 2022

Annexe 3 - Annex 3

Date d'inscription sur la liste du patrimoine mondial / Date of inscription on the World Heritage List : 2016

Critères / Criteria : (i)(ii)(vi)
Bien / Property : 98,4838 ha
Zone tampon / Buffer zone : 1 409,384 ha
Dossier / File : 1321rev
N46 28 6.29 E6 49 45.61

ANNEXE 3

BELGIQUE

Décision 44 COM 7B.152

L'Œuvre architecturale de Le Corbusier, une contribution exceptionnelle au Mouvement Moderne (Allemagne, Argentine, Belgique, France, Inde, Japon, Suisse) (C 1321rev)

5. Note également l'absence persistante de mesures de protection pour la zone tampon de la maison Guiette et demande également à l'État partie de Belgique de mettre en place une protection adaptée aux besoins particuliers de l'élément constitutif :

L'agence du Patrimoine de Flandre n'est pas d'accord avec l'interprétation qu'une protection adéquate n'est pas en place pour la maison Guiette.

Les dispositions légales actuellement en vigueur, déjà mentionnées dans les rapports précédents, sont suffisantes pour garantir que des décisions irréversibles ne soient pas prises sans place pour la consultation nécessaire. Il s'agit également d'un engagement auquel souscrivent toutes les parties concernées (agence du Patrimoine de Flandre, ville d'Anvers, propriétaires, ...). Le fait que le projet pour remplacer un bâtiment voisin est toujours en discussion depuis plusieurs années, et que plusieurs conceptions de ce projet ont été développées entre-temps, en est la meilleure preuve. La Fondation Le Corbusier et les représentants des six autres pays ont d'ailleurs également été consultés dans le passé.

Il faut aussi se rendre compte du fait que la maison Guiette est – malheureusement – située dans un environnement dense et très dynamique, où il est particulièrement difficile de fixer les évolutions spatiales. Le cadre actuel offre la souplesse nécessaire pour y faire face.

Cette position n'empêche pas l'agence du Patrimoine de Flandre de rester attentive aux possibilités de renforcer la zone tampon de la propriété Guiette. Elle étudie actuellement un outil de la législation sur le patrimoine immobilier, à savoir la zone de transition d'un bien protégé. Cette piste sera approfondie dans les prochains mois.

ANNEX 3

BELGIUM

Decision 44 COM 7B.152

The architectural work of Le Corbusier, an outstanding contribution to the Modern Movement (Germany, Argentina, Belgium, France, India, Japan, Switzerland) (C 1321rev)

Concerning point 6 of Decision 44 COM 7B.152 *"Also notes the continuing lack of specific protection measures for the Maison Guiette buffer zone and also requests the State Party of Belgium to put in place protection that is tailored to the specific needs of the component":*

The Flanders Heritage Agency does not agree with the interpretation that adequate protection is not in place for the Guiette House.

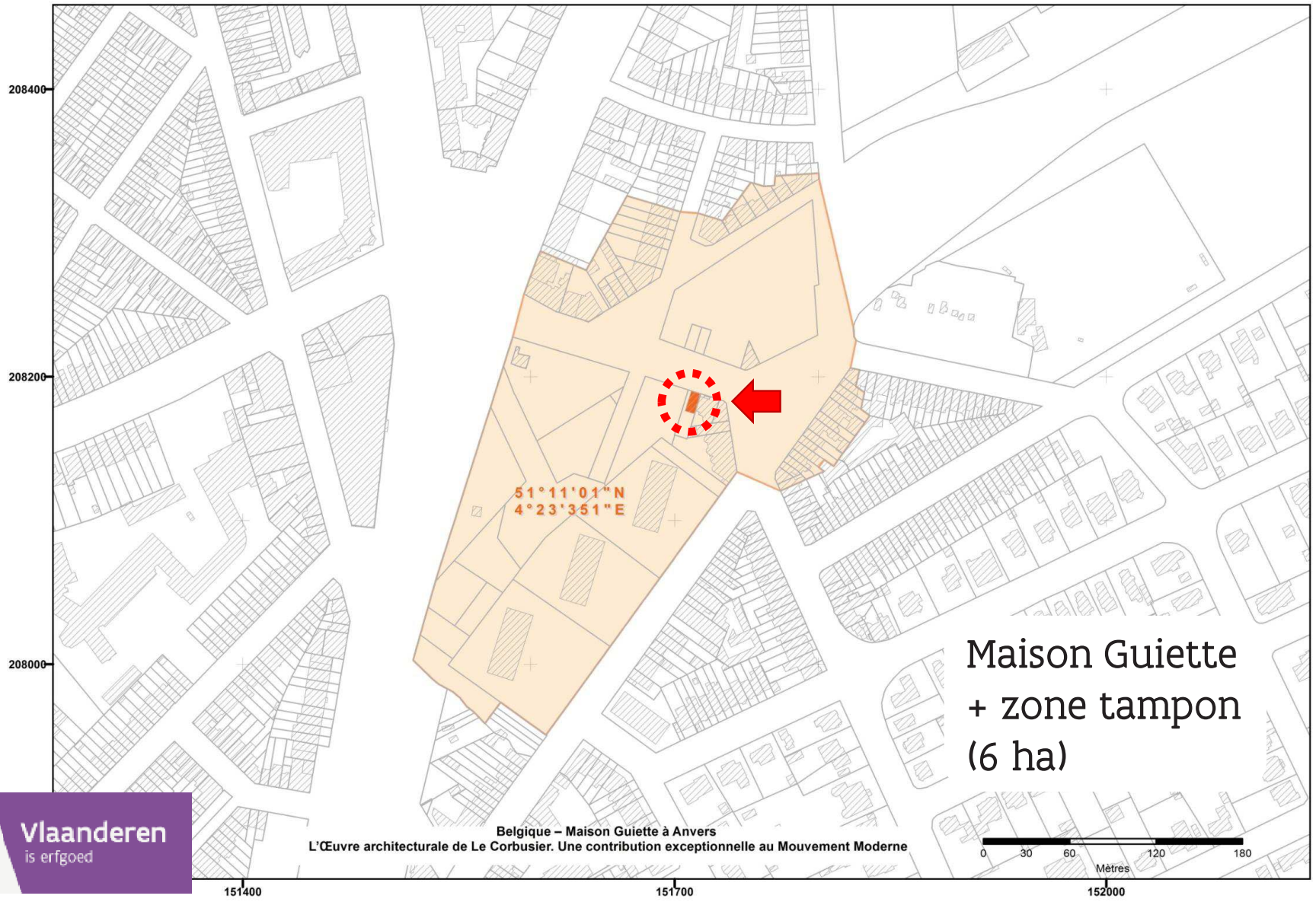
The legal provisions currently in force, already mentioned in previous reports, are sufficient to ensure that irreversible decisions are not taken without room for necessary consultation. This is also a commitment to which all parties concerned are committed (Flanders Heritage Agency, City of Antwerp, owners, etc.). The fact that the project to replace a neighbouring building has been under discussion for several years, and that multiple designs for this project have been developed in the meantime, is the best proof of this. The Fondation Le Corbusier and representatives of the six other countries have also been consulted in the past on this particular project.

One must also realize that the Guiette House is - unfortunately - located in a dense and highly dynamic environment, where it is particularly difficult to fix spatial developments. The current framework offers the necessary flexibility to cope with this.

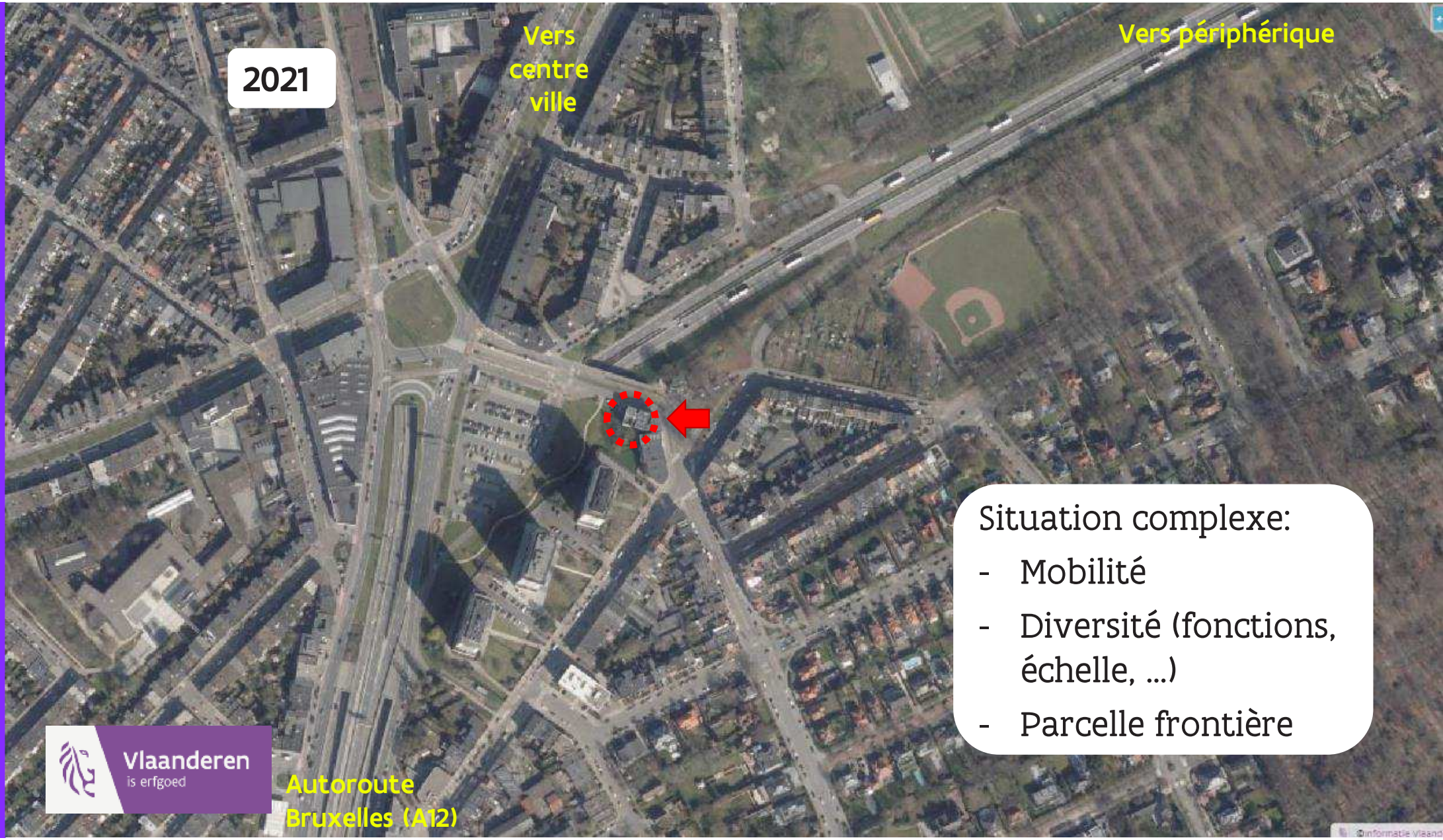
This position does not prevent the Flanders Heritage Agency from remaining alert to the possibilities of strengthening the buffer zone of the Guiette property. It is currently looking at a tool in the heritage legislation, namely the transition zone of a protected property. This avenue will be explored further in the coming months.

Annexe: gestion des abords de la Maison Guiette à Anvers

Vlaanderen
is erfgoed



Vlaanderen
is erfgoed



Situation complexe:

- Mobilité
- Diversité (fonctions, échelle, ...)
- Parcelle frontière

Vue depuis l'autoroute, venant de Bruxelles


Vlaanderen
is erfgoed

Vue depuis la maison Guiette sur le ouest: tramway, parc relais & urbanisation à grande échelle le long de l'A12

Vlaanderen
is erfgoed

Quartiers résidentiels vers le nord et l'est

Besluit van de Vlaamse Regering tot uitvoering van het decreet van 25 april 2014 betreffende de omgevingsvergunning van 27/11/2015

Art. 35, § 3. Het agentschap van het beleidsdomein Omgeving dat belast is met de uitvoering van het beleid inzake onroerend erfgoed verleent advies als het voorwerp van de vergunningsaanvraag betrekking heeft op :

…

3° goederen die erkend zijn als werelderfgoed of die in de bufferzone van het werelderfgoed liggen conform artikel 11 van de overeenkomst inzake de bescherming van het cultureel en natuurlijk erfgoed van de wereld, opgemaakt in Parijs op 16 november 1972, in de volgende gevallen :

a) als de goederen voorkomen op de lijst van het werelderfgoed;

b) als de percelen in de bufferzone, zoals goedgekeurd door het UNESCO-werelderfgoedcomité, op minder dan honderd meter van het werelderfgoed liggen;

c) als de percelen in de bufferzone, zoals goedgekeurd door het UNESCO-werelderfgoedcomité, op meer dan honderd meter van het werelderfgoed liggen, waarbij de constructie een hoogte van meer dan vijftien meter heeft of bereikt.

In afwijking van het eerste lid wordt het advies verleend door de Vlaamse Commissie Onroerend Erfgoed als een beroep middelen opwerpt over het advies van het agentschap, vermeld in het eerste lid, of over de behandeling van dat advies door de overheid, bevoegd in eerste administratieve aanleg.

Vlaanderen
is erfgoed

Arrêté du Gouvernement flamand portant exécution du décret du 25 avril 2014 relatif aux permis d'environnement du 27/11/2015.

Art. 35, § 3. L'agence du domaine politique Environnement chargée de la mise en œuvre de la politique du patrimoine immobilier donne son avis si l'objet de la demande de permis concerne :

...

3° un bien reconnu comme patrimoine mondial ou situé dans la zone tampon du patrimoine mondial conformément à l'article 11 de la Convention concernant la protection du patrimoine mondial, culturel et naturel, établie à Paris le 16 novembre 1972, dans les cas suivants :

a) si le bien figure sur la liste du patrimoine mondial ;
b) si les parcelles de la zone tampon, telles qu'approuvées par le Comité du patrimoine mondial de l'UNESCO, sont situées à moins de 100 mètres du site du patrimoine mondial ;
c) si les parcelles de la zone tampon, telle qu'approuvée par le Comité du patrimoine mondial de l'UNESCO, sont situées à plus de cent mètres du site du patrimoine mondial, lorsque la structure a ou atteint une hauteur de plus de 15 mètres.

Par dérogation à l'alinéa premier, l'avis est rendu par la Commission flamande du patrimoine immobilier si un recours soulève des moyens quant à l'avis de l'organisme mentionné à l'alinéa premier ou quant au traitement de cet avis par le gouvernement, compétent en première instance administrative.

--- *traduction inofficielle* ---

Vlaanderen
is erfgoed


Défis:
- « sur la frontière »
- « grands intérêts sociétaux »
- grand nombre de parties prenantes (gouvernementales)
Vlaanderen
is erfgoed

[→ pour le parc relais, on pensait à un certain moment à un bâtiment à plusieurs étages (>>impossible à cause du tunnel)]

Vlaanderen
is erfgoed

Discussion en cours sur le développement d'un bâtiment à coté de la maison guiette

Vlaanderen
is erfgoed

Vlaanderen
is erfgoed

Proposition 2017:
Office Kersten Geers
David Van Severen

existing situation Kruishofstraat/Populierenlaan

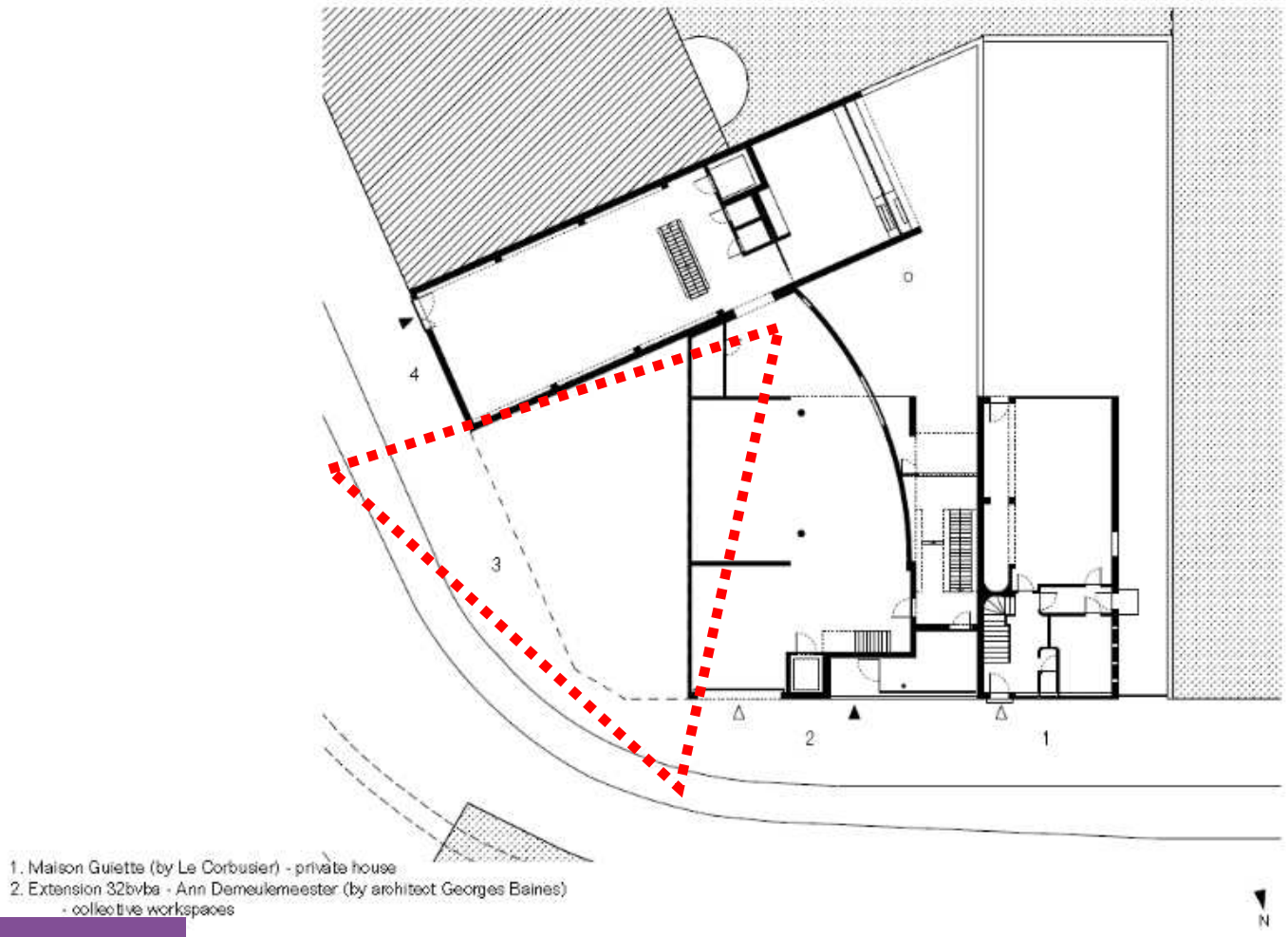
Vlaanderen
is erfgoed

Proposition 2017:
Office Kersten Geers
David Van Severen

existing situation Kruishofstraat

Vlaanderen
is erfgoed

Proposition 2017:
Office Kersten Geers
David Van Severen



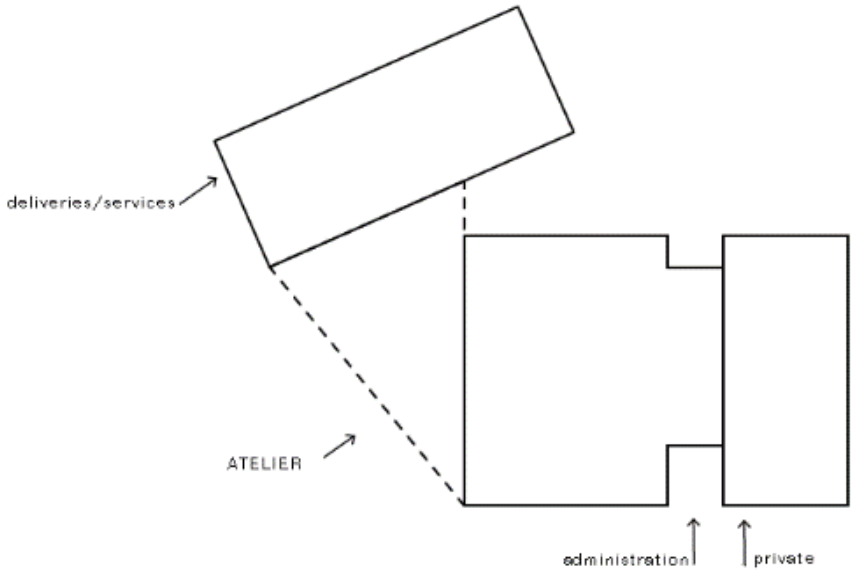
1. Maison Guiette (by Le Corbusier) - private house
2. Extension 32bvba - Ann Demeulemeester (by architect Georges Baines)
   - collective workspaces

ilding
d archives (by architects Robbrecht en Daem)

SCHEMEPLAN existing situation

Vlaanderen
is erfgoed

Proposition 2017:
Office Kersten Geers
David Van Severen



entrances

Vlaanderen
is erfgoed

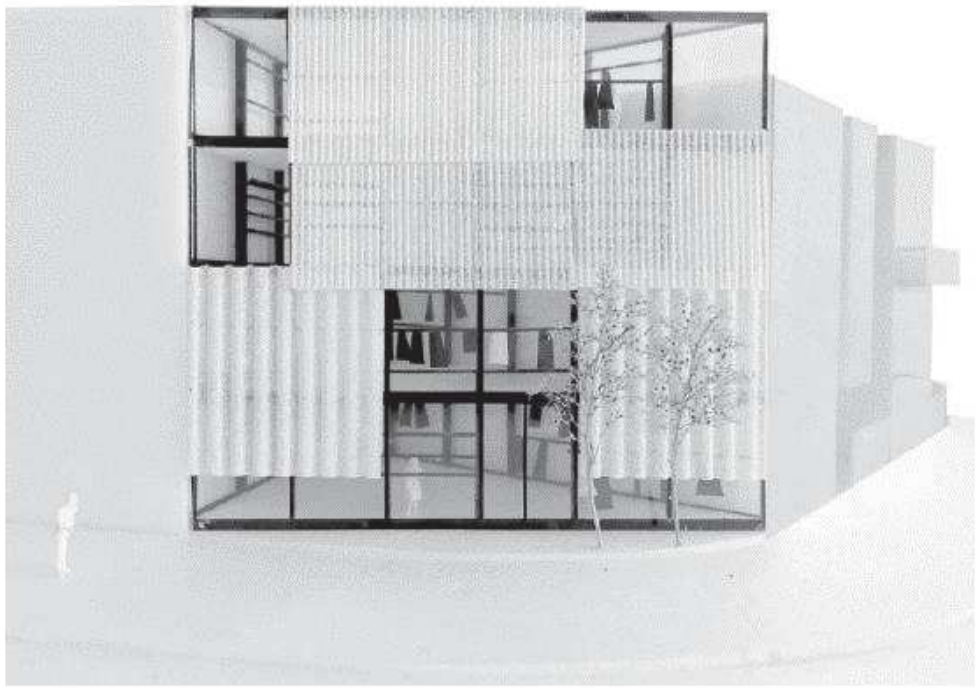
Proposition 2017:
Office Kersten Geers
David Van Severen

1. ATELIER : entrance / exhibition space / foyer
valent space
ace

PLAN ground floor +0

Vlaanderen
is erfgoed

Proposition 2017:
Office Kersten Geers
David Van Severen



maquette

Vlaanderen
is erfgoed

Situation actuelle

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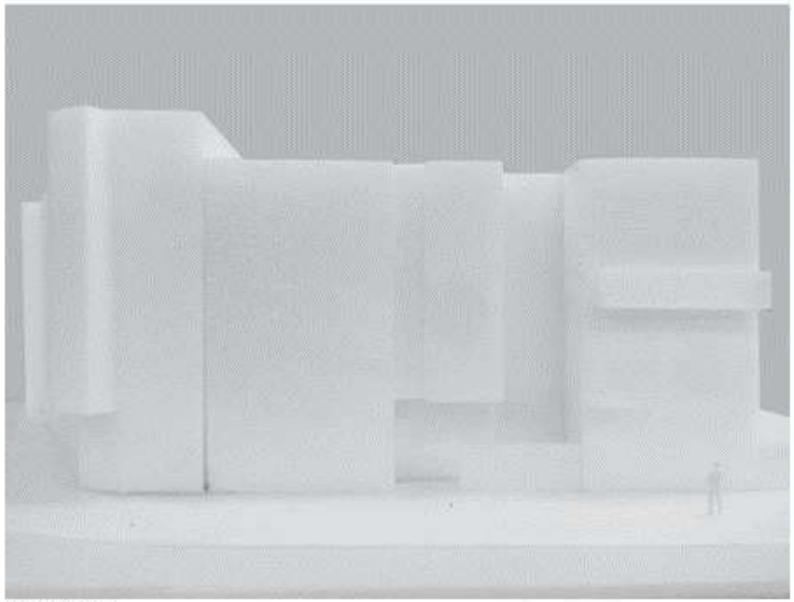
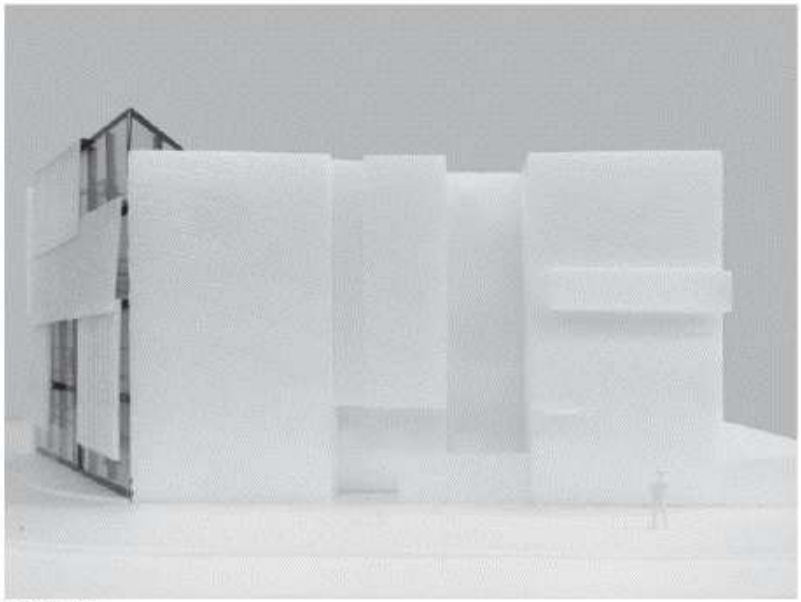
David Van Severen



existing situation



new situation

Vlaanderen
is erfgoed

maquette

Proposition 2021:
MADE ARCHITECTS

Kruishofstraat 140
GEVELMATERIALEN
gevelsten: bruin
buitenschrijnwerk: aluminium: zwart
dakrand: aluminium: zwart

Kruishofstraat 138
GEVELMATERIALEN
gevelbekleding: zandsteen (1.)
gevelsteen: licht bruin (2.)
buitenschrijnwerk: hout: wit (3.)
buitenschrijnwerk: pvc: wit (4.)
simili: gevelpleister: gebroken wit (5.)
dakrand: hout: geschilderd: wit (6.)

Populierenlaan 34
GEVELMATERIALEN
gevelbekleding: gevelpleister: grijs (blauw)
buitenschrijnwerk: staal: grijs (blauw)
dakrand: staal: grijs (blauw)

Populierenlaan 32
GEVELMATERIALEN
gevelbekleding: gevelpleister: wit
buitenschrijnwerk: staal: grijs (blauw)
dakrand: staal: grijs (blauw)

VOORGEVEL - uitvouwing
bestaande toestand

1 2 5m

Vlaanderen
is erfgoed

MADE ARCHITECTS
De Conninckplein 21 | 2060 Antwerpen | T +32 3 238 41 38 | www.madearchitects.be

VERBOUWING HOEKPAND — BA_21.13 FSHN_G_B_Voor
BOUWHEER — FASHION PRINCIPLES NV
ADRES — KRUISHOFSTRAAT 138 - 2020 ANTWERPEN
PROJECTNR 21.09 FSHN | SCHAAL 1/100 | A3 | DATUM 09.12.2021

Proposition 2021: MADE ARCHITECTS

GEVELMATERIALEN

gevelbekleding: baksteen: wit (1.)
gevelelement: prefab beton: lichtgrijs (2.)
buitenschrijnwerk: hout (3.)
buitenschrijnwerk: licht vuilgroen (4.)
dakrand: aluminium: wit (5.)
balustrade: wit (6.)
balustrade: licht vuilgroen (7.)

Vlaanderen
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lshofstraat

0 1 2 5m

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VERBOUWING HOEKPAND VO_21.13 FSHN_G_N_Voor-A1
BOUWHEER FASHION PRINCIPLES NV
ADRES KRUISHOFSTRAAT 138 - 2020 ANTWERPEN
PROJECTNR 21.09 FSHN SCHAAL 1/100 A3 DATUM 09.12.2021

Proposition 2021:
MADE ARCHITECTS

GEVELMATERIALEN

gevelbekleding: baksteen: wit (1.)
gevelelement: prefab beton: lichtgrijs (2.)
buitenschrijnwerk: hout (3.)
buitenschrijnwerk: licht vuilgroen (4.)
dakrand: aluminium: wit (5.)
balustrade: wit (6.)
balustrade: licht vuilgroen (7.)

Vlaanderen
is erfgoed

oullerenlaan

0 1 2 5m

MADE ARCHITECTS
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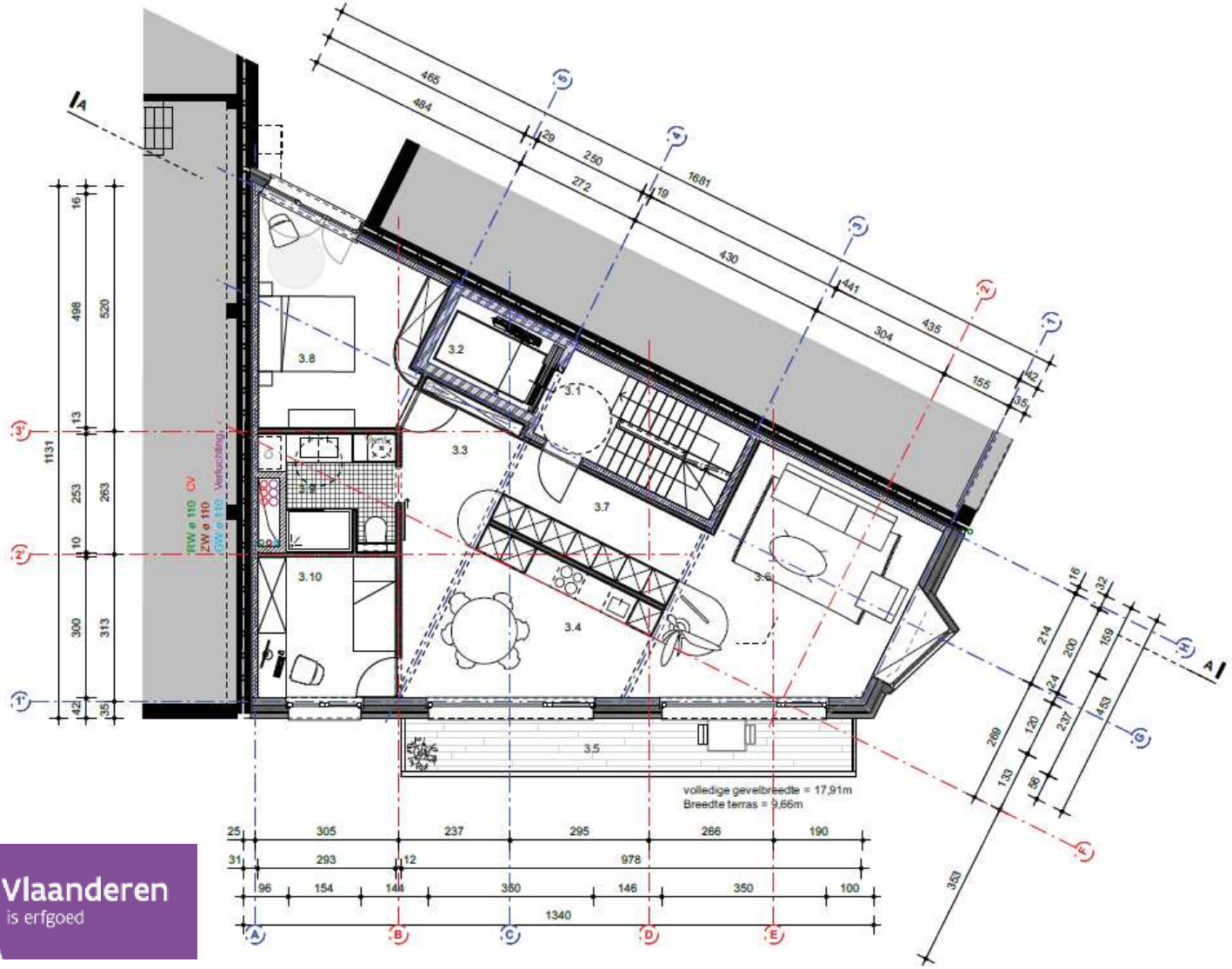
VERBOUWING HOEKPAND VO_21.13 FSHN_G_N_Voor-A2
BOUWHEER FASHION PRINCIPLES NV
ADRES KRUISHOFSTRAAT 138 - 2020 ANTWERPEN
PROJECTNR 21.09 FSHN SCHAAL 1/100 A3 DATUM 09.12.2021

Proposition 2022:
MADE ARCHITECTS

Vlaanderen
is erfgoed


136 Kruishofstraat
Antwerpen, Vlaams Gewest
Google
Street View - aug. 2020
Druk op F11 om het volledige scherm te sluiten
Vlaanderen
is erfgoed

Proposition 2022:
MADE ARCHITECTS



LEGENDE APPARTEMENT
UNIT +3.1 opp. 89m2

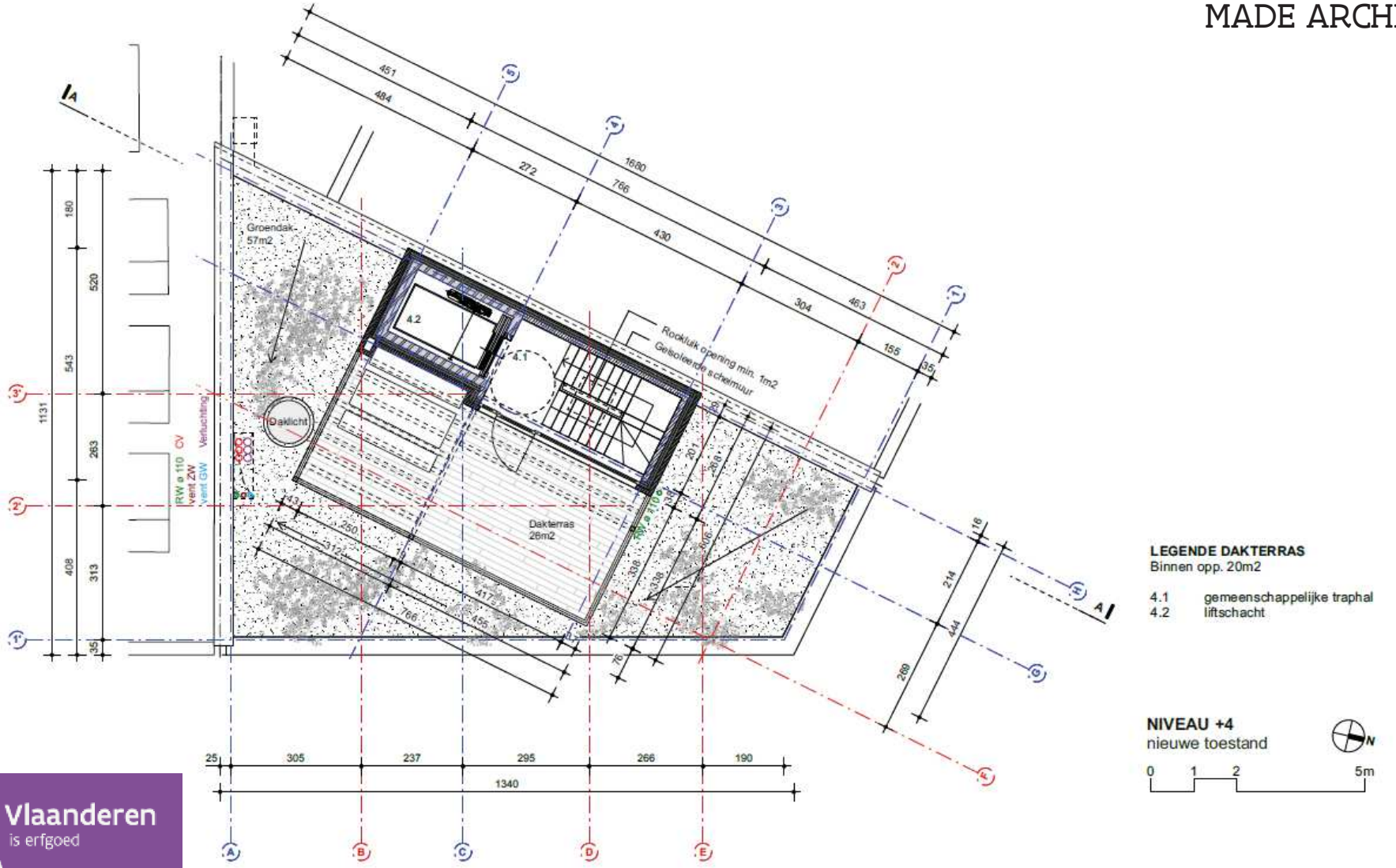
3.1	gemeenschappelijke traphal
3.2	liftschacht
3.3	inkom/vestiaire
3.4	eetruimte en keuken
3.5	terras 11m2
3.6	zitruimte
3.7	bureau
3.8	slaapkamer 1
3.9	badkamer
3.10	slaapkamer 2

NIVEAU +3
nieuwe toestand

0 1 2 5m

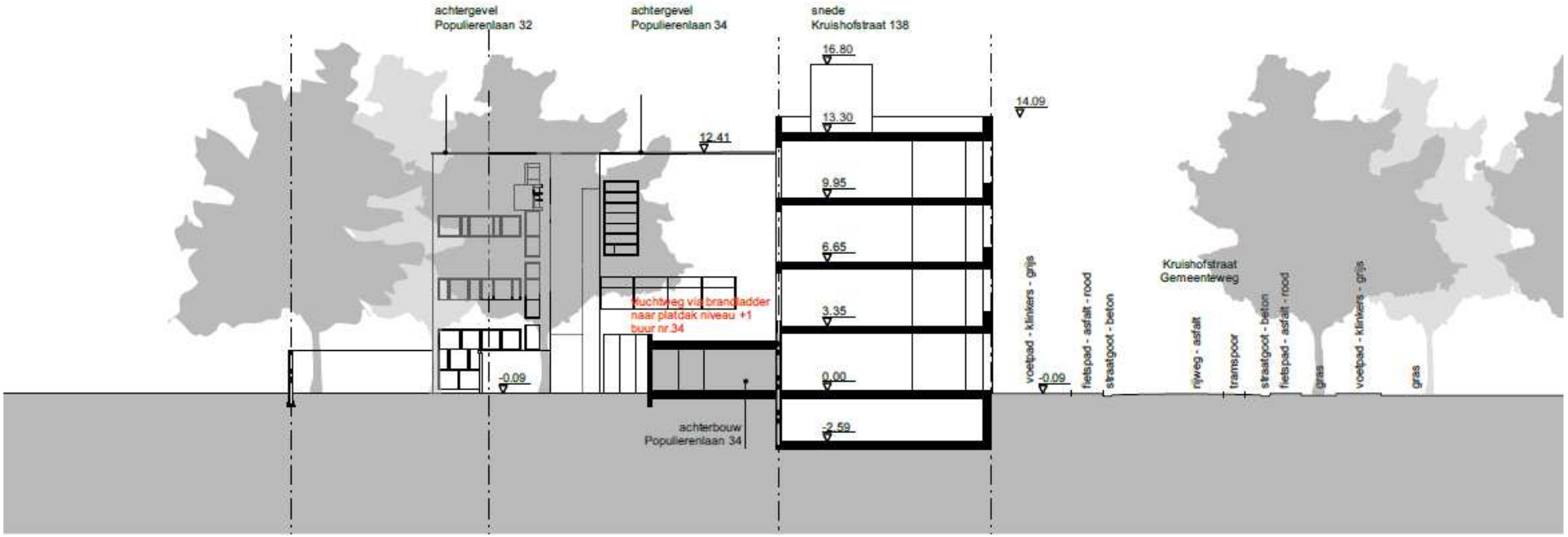
Vlaanderen
is erfgoed

Proposition 2022:
MADE ARCHITECTS



Vlaanderen
is erfgoed

Proposition 2022:
MADE ARCHITECTS



TERREINPROFIEL BRANDWEER
nieuwe toestand

0 1 5 10m

Vlaanderen
is erfgoed