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# ADAPTIVE REUSE OF A RUINED CHURCH INTO A CHILDREN'S LEARNING AND LIVING CENTRE

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***Abstract:*** *This research explores the adaptive reuse of a ruined Portuguese-era church located in the campus of Our Lady of Fatima Convent School, Moti Daman. The project proposes transforming the structure into a children's learning and living centre, combining a heritage library with residential facilities for orphan children. The study focuses on interior design strategies that preserve historical identity while integrating modern functionality. Through literature study, case studies, and site analysis, the research demonstrates how adaptive reuse can serve both heritage conservation and social welfare.*

***Keywords:*** *Adaptive reuse, heritage conservation, children's centre, ruined church, interior design, Daman, Portuguese architecture.*

## 1. INTRODUCTION

Adaptive reuse is a design approach where old and unused buildings are given a new function while maintaining their original identity. In today's time, many historic structures like churches are abandoned or underused. Instead of demolishing them, reusing these structures helps in preserving cultural heritage and also supports sustainable development.

It is the practice of taking an old building and giving it a new function without tearing it down or fundamentally altering its structure. It is now widely accepted in international conservation circles as the most responsible way to deal with historic buildings that have outlived their original use. The Venice Charter, ICOMOS, and India's own INTACH guidelines all support the idea that a building's physical fabric should be preserved while allowing its function to evolve with the needs of the people around it.

Adaptive reuse is not just about giving a building a new function, but also about creating a meaningful connection between the past and the present. In this project, the interior design plays a crucial role in shaping how the space will be experienced by children on a daily basis. The design aims to retain the calm and serene quality of the church while introducing elements that bring life, energy, and warmth into the space. This balance helps in creating an environment that is both respectful to its history and suitable for its new purpose.

The ruined church located in the Fatima School campus in Daman presents a strong opportunity for such transformation. The church, along with its attached building, is currently unused but holds emotional, cultural, and architectural value. By reimagining its purpose, it can be turned into a meaningful space that serves the community.

This project proposes to convert the church into a reading hall and library, and the attached building into a living space for orphan children. The idea is to create a safe, inspiring, and nurturing environment where children can learn, grow, and live comfortably. The focus is only on interior design, without altering the structure or exterior of the building.

## 2. BACKGROUND: RUINED CHURCH.

### 2.1. Portuguese Colonial Origin (16th–17th Century)

- Moti Daman was under Portuguese rule from the 1500s until 1961, and during this period, numerous churches, chapels, and convent institutions were constructed.
- The ruined church within the school campus is part of this colonial ecclesiastical network, likely built as a chapel or religious structure associated with missionary activity and convent education.
- Similar nearby structures, like the Chapel of Our Lady of Remedies, date back to late 16th–early 17th century (around 1581–1607), indicating that religious buildings in this area are over years.

### 2.2. Role of Missionaries and Convent Institutions

During Portuguese rule in Moti Daman, religious missionaries played a central role in shaping the social and institutional framework of the settlement. Catholic missionary orders were responsible not only for the construction and administration of churches but also for establishing educational institutions. Convent-based education was a key feature of this system, where religious instruction and formal learning were integrated within the same institutional environment. Schools managed by nuns or religious authorities functioned alongside churches or chapels, allowing daily religious practices such as Mass and prayer to be part of institutional life.

The presence of a ruined church within the campus of Our Lady of Fatima Convent School reflects this historical model. Such a structure would have served as a space for worship and spiritual activities associated with the convent institution. This relationship between church and school demonstrates the broader Portuguese approach of combining religion, education, and community life within a single spatial and institutional framework.

### 2.3. Post-Colonial Transition (After 1961)

The political status of Daman changed significantly after 1961, when Portuguese rule ended and the territory was incorporated into the Indian Union. This transition brought shifts in administrative control and institutional priorities. While major and actively used churches in Moti Daman continued to function as religious centers, smaller or secondary religious structures—especially those within institutional campuses—often experienced a decline in use.

In most instances, the focus for maintenance was shifted towards the main religious buildings, whereas other structures, such as chapels, did not receive as much care. As a result, there was a decrease in the functionality of these structures, leading to their eventual deterioration. The church building inside the school premises is another example of this process taking place during the post-colonial era.

### 2.4. Present Condition and Significance

In its current state, the ruined church is an old, dilapidated structure located in the operational campus of Our Lady of Fatima Convent School. This situation is a result of several reasons including the aging of the structure, the neglect of regular upkeep, and the environmental elements of Moti Daman, which include high levels of moisture, salty air, and the monsoonal rains that are abundant throughout the region. All of these elements have contributed to the deterioration of the materials used in the construction of the church, including lime mortar and masonry.

While the structure has been rendered into ruins, it remains historically valuable in several ways. For example, it provides an example of the architecture created during the era of Portuguese rule and exemplifies how education and religion were integrated into the fort of Moti Daman. In this respect, the ruined church is a valuable element of architectural heritage within the campus.

## 3. LITERATURE REVIEW

### 3.1 Adaptive Reuse: Definitions, History, and Theoretical Frameworks

Adaptive reuse is defined as the process of reusing an existing building for a purpose other than the one for which it was originally built or designed. It is distinct from simple renovation in that it involves a fundamental change of function, not just an upgrade of the existing use. The practice has been documented throughout history: Roman temples were converted into Christian churches, medieval monasteries became schools and hospitals, and industrial buildings were repurposed as housing and cultural centres.

In the present days adaptive reuse as theory developed from the mid twentieth century in response to the systematic destruction of historic buildings in post-war rebuilding and urban regeneration. The Venice Charter of 1964, developed during the Second International Congress of Architects and Technicians of Historic Monuments, first enunciated the principle that historical buildings not only had a physical significance but a much broader importance-containing history, social identity and cultural memory. The Charter advocated a minimal intervention in historic buildings with the utmost respect to their original features and the reversibility of any new addition.

Additional guidelines were then created on this basis. ICOMOS (The International Council on Monuments and Sites) introduced guidelines advocating that any additions to existing structures should contrast with the old whilst relating harmoniously to the overall form.

Similarly the INTACH (Indian National Trust for Art and Cultural Heritage) guidelines adhere to similar principles but give careful consideration to the tropical and coastal nature of many of the Indian heritage structures. Reversible insertions should cause no permanent damage to the original fabric and the designs should respond to India's climate through passive strategies.

### 3.2 Children's Living Environments: Design Principles

Children's environments-specifically those designed for orphan children and children in institutions- are a specific field within interior design, incorporating research from child psychology, environmental psychology and social work. There are a number of overarching themes which have consistently appeared within this research. These include: Children require a sense of safety and protection but without the feeling of being confined; They need access to daylight, ventilation and the view of the outside world; They benefit from environments that support quiet, solitary activities, such as reading or rest, and others that foster social engagement through play and communal activities, such as sharing meals; They respond best to an environment that feels welcoming and comfortable rather than sterile and clinical. Institutional care for orphans in India has, historically, been characterized by functional environments that disregard comfort-such as large dormitories with shared bathrooms and dining facilities. Recent projects such as the Maher Ashram in Satara designed by Studio PPBA show that institutions providing care for children can be low-cost, environmentally sensitive and also genuinely beautiful; The Maher Ashram, for instance, is built with simple brick, concrete and timber to create spaces which are warm and human-scaled with the central courtyard becoming the focus for all activity. The precedent of this building and layout is therefore very relevant to the site proposed for a children's living centre in Moti Daman which already uses this sort of courtyard layout for its interior arrangements. In developing a design for a children's living center, the following features need to be considered: sleeping space for boys and girls to be separated, communal dining area with access to a kitchen, bathing and washing facilities, a medical room, administrative office, communal/recreational space and access to the reading room and library within the adjacent church. All furniture needs to be child-scale, durable, easily cleaned and safe (no sharp edges, stable to support sitting, etc.

### 3.3 Heritage Libraries and Reading Halls in Historic Structures

The idea of setting a library or a reading room within an old church premises is not an old phenomenon worldwide. To provide one example from Europe, one may find the Dominicanen Bookstore at Netherlands to be quite interesting. This building is actually a 13th-century Gothic Dominican church which was converted into a bookstore and reading hall in 2006. The Gothic arches, the frescoes and the vaulting of the old church building are all kept as original during conversion, with a bookshelf fitted in the nave of the church using steel as material. This steel bookshelf can be removed at any time without causing any damage to the old architecture of the building.

Locally one may give example of the St. Thomas Church at Diu, which was a colonial era Portuguese religious building erected in the year 1598, or about 10 years before the St. Paul's Church of Diu. After the liberation of the territory from Portuguese control, it was converted into a museum of Diu. While retaining its original stone masonry and lime plastering and timber roof framing, its interiors were modified to exhibit objects pertaining to its past and present culture. It can be said that the converted museum at the site is not up to the quality standards, but it points out the flexibility of old Portuguese religious buildings at Daman and Diu.

## 4. Scope and Methodology

This research is entirely based on information collected through direct site visits to the Dominican Monastery Church and campus, photographs taken during the site visit, spatial measurements taken of both the ruined church building and the adjacent two-storey structure, and secondary resources including: official tourism portal of the UT of Dadra and Nagar Haveli and Daman and Diu, ICOMOS published papers, architectural case study databases (ArchDaily, Archilovers), and published studies of the Maher Ashram project.

Interior design intervention only, this study only covers design proposals for internal spaces. No interventions in the existing building structure, external form or building envelope have been proposed.

The methodology was followed in the following order:

1. Site visit, observation and primary data collection - Site visit, observation, taking photographs, measuring space and informally observing current user behavior.
2. Secondary data collection - Literature research on theory of adaptive re-use, conservation charters and precedent projects.
3. Desktop study of two directly comparable projects: the St. Sebastian Church Kindergarten in Germany and the Dominicanen Bookstore in Maastricht.
4. Case study of two comparable Indian projects: the Maher Ashram Orphanage School in Pune and the St. Thomas Church Museum in Diu.
5. Comparison of all four precedent case studies with relevant standards and user needs for Moti Daman project.

## 5. DESKTOP STUDIES AND CASE STUDIES

### 5.1. Desktop Study 1: St. Sebastian Church Kindergarten, Germany.

The adaptive reuse of the St. Sebastian Church demonstrates how a religious structure can be transformed into a child-centric learning space. Originally built in 1962, the church was later deconsecrated and converted into a kindergarten by architects Bolles+Wilson. The design retained the original elliptical form and architectural identity while introducing functional spaces such as classrooms and play areas. The lower floors accommodate learning spaces, while the upper levels are designed as indoor and outdoor play decks with skylights and natural ventilation. This project highlights how adaptive reuse can successfully integrate educational functions within a historic structure while ensuring a safe, interactive, and stimulating environment for children.

The original church structure, which has an elliptical nave plan, was fully preserved. No changes were made to the exterior. Inside, the designers inserted multi-level spaces within the existing volume — classrooms, play areas, and a roof-level indoor play deck with skylights. The insertions are clearly modern in appearance, made from timber and glass, and are designed to be reversible.

Fig.1, St. Sebastian Church Kindergarten.

**5.2. Desktop Study 2: Dominicanen Bookstore, Netherlands.**

The transformation of the Dominican Church into the Dominicanen bookstore is a example of adaptive reuse in heritage architecture. Originally a 13th-century Gothic church, the building lost its religious function after the French Revolution and remained underutilized for years. In 2006, it was converted into a bookstore by inserting a modern steel, multi-level book structure within the existing nave. The design approach emphasized reversibility and minimal intervention, preserving original features such as arches, and spatial volume. The integration of contemporary lighting and interior elements enhances both the books and the architectural character of the church. This case demonstrates how modern functions can coexist with historic identity without compromising authenticity.

Fig.2, Dominicanen Bookstore.

**5.3. Case Study 3: Maher Ashram (Orphanage and School), Pune**

The Maher Ashram in Pune is an example of a socially driven design that focuses on providing shelter, education, and emotional support to orphaned and underprivileged children. Designed with a human-centric approach, the campus integrates residential and learning spaces around courtyards, promoting interaction, safety, and community living. The spatial planning ensures a balance between private and shared areas, supporting both individual growth and social bonding. This case highlights how design can respond to the psychological and physical needs of children while maintaining functional efficiency.

The ground floor includes an entry, a central gathering space (aangan), classrooms, a kitchen and dining hall, toilets, and a security cabin. The upper floors provide dormitories for girls, sick rooms, guest rooms, a computer lab, laundry, and a staff room. The building uses simple, durable materials — plastered brick walls, tiled floors, and shaded verandas — with a child-friendly design that includes low seating edges, open corridors, and tactile finishes.

Fig.3, Maher Ashram (Orphanage and School)

**5.4. Case Study 4: St. Thomas Church Museum, Diu**

The St. Thomas Church in Diu, originally built during Portuguese rule in the 16th century, has been adaptively reused as a museum. The transformation preserves the historic character of the structure, including its white facade, vaulted interiors, and wooden detailing, while introducing exhibition spaces within the nave. The design intervention is minimal, focusing on display systems and lighting rather than altering the original architecture. The calm and contemplative atmosphere of the church is well-suited to a museum function, allowing visitors to experience both history and heritage simultaneously. This case demonstrates how adaptive reuse can maintain cultural continuity while assigning a new public function to a historic building.

Moving up to the first floor, visitors can explore the museum's collection of antique furniture and colonial-era artefacts. This section showcases the Portuguese influence on the region and provides an insight into the lifestyle and culture of the colonial era.

The museum also has a gallery dedicated to the local art and handicrafts of the region. Visitors can admire the intricate quality of the traditional embroidery and weaving techniques used by the local artisans.

Fig.4, St. Thomas Church Museum

**6. COMPARATIVE ANALYSIS**

The selected case studies demonstrate that adaptive reuse is most successful when the original architectural character is preserved while introducing new functions through minimal and reversible interventions. Religious structures, due to their large volumes and spatial quality, are particularly suitable for functions such as learning spaces, cultural centres, and community facilities. Overall, a balance between functionality, user needs, and conservation principles is essential for effective adaptive reuse.

Overall, the comparative analysis reveals that adaptive reuse of religious heritage structures requires a careful balance between preservation, intervention, and functionality. The lessons derived from the case studies—such as minimal intervention, respect for original spatial qualities, and contextual integration—are directly relevant to the ruined church in Our Lady of Fatima Convent

School. These insights provide a foundation for developing a design approach that is both contextually sensitive and functionally viable.

| Case Study | Original Use | New Use | Design Approach | Key Features | Learning Outcome |
|---|---|---|---|---|---|
| St. Sebastian Church Kindergarten | Church | Kindergarten | Interior transformation | Play areas, skylights, child-friendly spaces | Heritage spaces can support children's learning |
| Dominicanen Bookstore | Gothic Church | Bookstore | Minimal intervention | Steel insert, preserved volume | Modern function can coexist with heritage |
| Maher Ashram, Pune | Residential Campus | Orphanage + School | Functional planning | Courtyards, passive design | Child-centric design improves well-being |
| St. Thomas Church Museum | Church | Museum | Conservation-focused | Display systems, minimal changes | Calm spaces suit cultural functions |

Table 1: Comparative Analysis of case studies

The comparative analysis shows that heritage structures, particularly churches, can be effectively adapted to new functions such as educational, cultural, and public spaces while retaining their architectural identity. Projects like Dominicanen Bookstore demonstrate that minimal intervention can preserve the original spatial character, whereas transformations like St. Sebastian Church Kindergarten highlight how interiors can be modified to suit specific user needs, especially for children. Similarly, conservation-focused approaches seen in St. Thomas Church Museum maintain the calm and contemplative quality of the space, while institutional examples like Maher Ashram emphasize functional planning and user well-being. Overall, the analysis indicates that successful adaptive reuse depends on a balance between preserving heritage value, introducing minimal yet effective interventions, and designing according to user requirements.

## 7. DISCUSSION

### 7.1 The Ruin as a Resource

Ruined church within the grounds of Our Lady of Fatima Convent School, Moti Daman could be perceived as a resource that would not require any rebuilding to become useful. Its remaining walls and enclosed space would create a convenient basis for further use of the ruin. This would allow making changes to the existing space while preserving its authentic appearance. Thus, the ruin is a solid starting point for reinterpreting the architecture within the existing campus environment.

### 7.2 Children and Heritage

The location of the ruined church within an active school environment establishes a direct relationship between children and a heritage structure. This proximity allows the site to act as a medium for experiential learning, where students are physically connected to a historical environment. The presence of such a structure within an educational campus contributes to awareness of cultural heritage and built history through everyday interaction, rather than through external or theoretical exposure.

### 7.3 Conservation Ethics and Interior Design

Adaptive reuse of a ruined structure requires a careful balance between conservation and intervention. Conservation ethics emphasize retaining original materials, spatial qualities, and structural integrity, while interior design introduces functional elements necessary for contemporary use. The discussion indicates that interventions should be minimal and reversible, ensuring that the historical character of the structure is not compromised. This approach allows the integration of new functions without obscuring or altering the existing heritage value.

### 7.4 Challenges and Limitations

The current condition of the ruined church presents several challenges, including structural deterioration, exposure to environmental factors, and lack of maintenance. The coastal climate of Moti Daman, characterized by humidity, salt-laden air, and heavy rainfall, accelerates material decay. Additionally, the structure's non-functional status within the campus results in limited integration with daily activities. These factors impose constraints on intervention strategies, requiring careful consideration of preservation needs, environmental impact, and compatibility with the surrounding institutional setting.

## 8. Design Guidelines

The following guidelines are derived from the research, site analysis, case studies, and applicable conservation standards. They are intended as practical guidance for any designer working on the adaptive reuse of the Church and adjacent building in Moti Daman.

### 8.1 Heritage Conservation Principles

The design strategy for the ruined church within the premises of Our Lady of Fatima Convent School in Moti Daman, should focus on preserving the current fabric and space of the existing church. The design interventions should be minimal, and preserve the authenticity of the church by using its existing materials like stone masonry and lime based structures. New elements should be easily identifiable from the historic fabric but visually harmonious. The existing open to sky spaces should be handled with extreme care byeither leaving them open or introducing light non-interfering covers over them.

### 8.2 Spatial Design Guidelines for the Heritage Library

*(Zone A — Ruined Church)*

The ruined church space should be adapted as a heritage library by utilizing its inherent spatial qualities, such as enclosure, volume, and openness. The surviving walls can define reading zones, while the central open area can function as a flexible reading or gathering space. Furniture and interior elements should be lightweight and modular, avoiding permanent alterations to the structure. Natural light should be maximized through existing openings, with minimal artificial intervention to maintain the original ambiance. Circulation within the space should remain unobstructed, allowing users to experience the full volume of the structure. Any new insertions, such as platforms or seating, should be designed as independent elements that do not interfere with the existing walls. The design should emphasize quietness, contemplation, and connection to the historic setting.

### 8.3 Spatial Design Guidelines for the Children's Living Centre

*(Zone B — Adjacent Building)*

The adjacent building, designated as the children's living centre, should be designed to support daily activities such as learning, interaction, and rest within a safe and comfortable environment. Spatial planning should prioritize clear zoning for different functions, including study areas, activity spaces, and resting zones. The design should ensure adequate natural ventilation and daylight, responding to the climatic conditions of Moti Daman. Circulation should be simple and easily navigable for children, with visual connections between spaces to enhance supervision and safety. Materials and finishes should be durable and appropriate for frequent use, while maintaining a calm and welcoming environment. The relationship between Zone B and the ruined church (Zone A) should be strengthened through visual or physical connections, allowing both spaces to function as part of a cohesive institutional environment.

## 9. Conclusion

The Dominican Monastery Church at the Our Lady of Fatima Convent School, Moti Daman campus, represents one of the most important ruins from an architectural and historical perspective along the western coast of India. Established in 1567 as the primary theological center within the Portuguese province of Daman, it has remained a ruin for centuries – abandoned, slowly decomposing and essentially forgotten by anyone outside the immediate vicinity. This paper proposes that the ruin is not a problem requiring correction, but a spatial and cultural resource that can be reactivated. It seeks to restore purpose to the space through interior-only adaptive reuse with two components: a Heritage Library within the church nave, and a Children's Living Center within the adjoining two-story building. The dual programmatic components aim to meet two critical demands: the preservation of a crucial heritage structure and the provision of a safe and nurturing space for orphaned children.

The case studies examined in this research — the Dominicanen Bookstore in Maastricht, the St. Sebastian Church Kindergarten in Germany, the Maher Ashram Orphanage in Pune, and the St. Thomas Church Museum in Diu — all demonstrate that adaptive reuse of historic religious buildings for educational, cultural, and social welfare purposes is not only feasible but can produce outstanding results. The strongest precedents score highest on both heritage sensitivity and social impact, confirming that these two values are not in conflict but complementary.

The design guidelines developed in this research provide a practical framework for any future designer working on this project. They are grounded in the Venice Charter, ICOMOS principles, the Burra Charter, INTACH guidelines, and the National Building Code of India 2016. They emphasise reversibility, minimal intervention, distinguishability of new from old, and the use of natural materials appropriate to the coastal climate and heritage setting.

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